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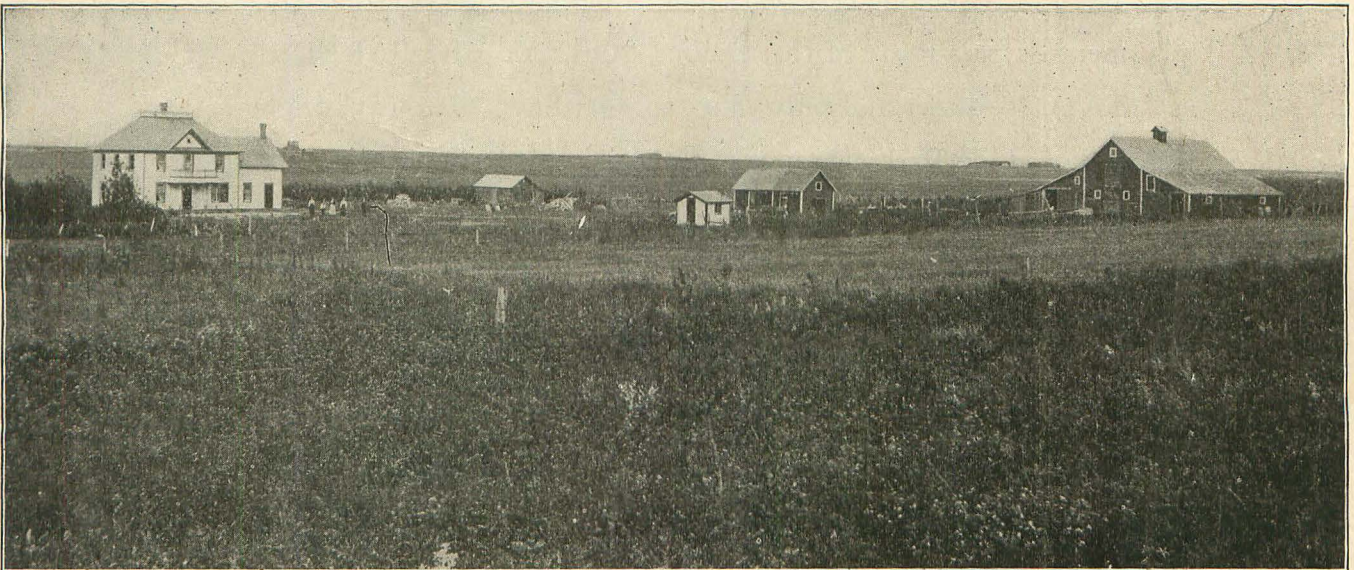
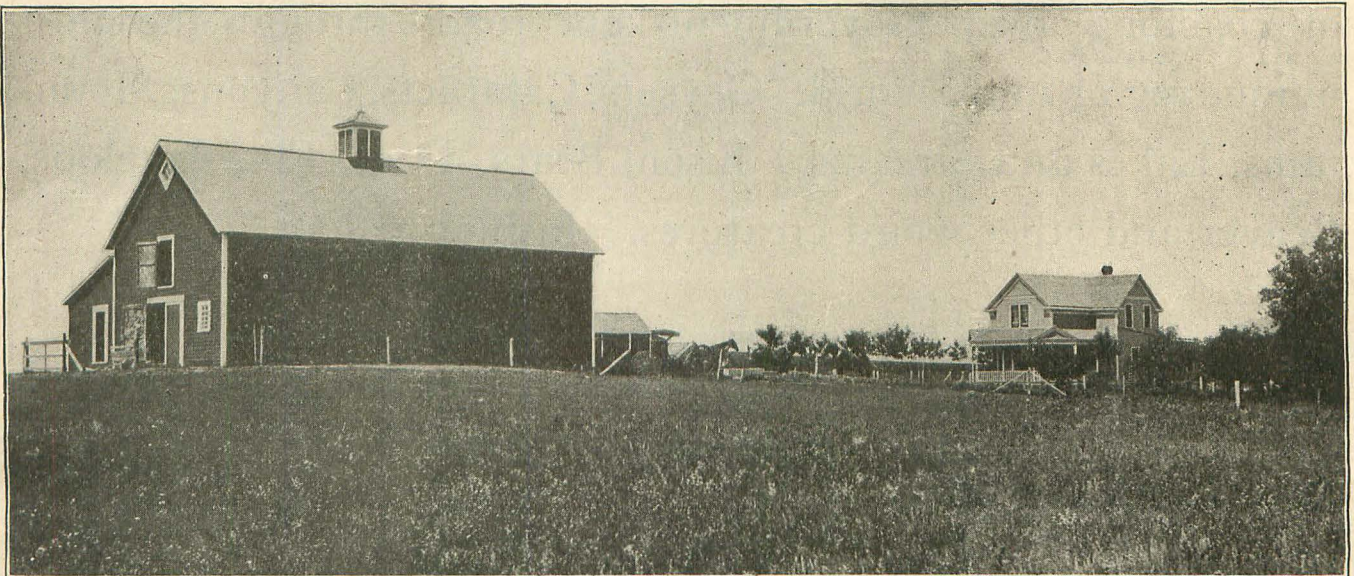


"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 14 No. 12

Lisbon, North Dakota, June 15, 1913

50 Cents A Year



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NORTHERN PACIFIC RAILWAY

THE NORTH DAKOTA FARMER

Vol. 14, No. 12

LISBON N. D., JUNE 15, 1913

50 Cents a Year

The Country Home and Country Life

By Pres. J. H. Worst, Agricultural
College, North Dakota

First among the institutions of civilized society to be reckoned with as a potent factor in shaping the destiny of a nation is the home, the family. The home, especially the rural home, is the heart of the conservative nation. It is under all conditions, the fountain from which issues life's first effervescent hopes. She who is queen of the home, be it hovel or mansion, and mother of the children that dwell within, is the most striking factor in the world's upward progress. It is she who transmits to the race the virtues that ripen into patriotism and justice and religion. It has been well said that the civilization of a people may be judged by the social position accorded to its women.

Moreover, the children of every mother have an inalienable right to be well born. Not necessarily born to the inheritance of wealth or aristocratic rank, but with vigorous health and sound bodies.

"A race of weaklings on the farms of the United States means that the United States ceases to be a power among the nations; and the place where the most virile children are born is on the farm and not, as a rule, in the city."

That she may bequeath to her children the utmost degree of vigor, physical, mental and spiritual, those qualities which insure the very best material for American citizenship, the country home must not make unreasonable physical demands upon the wife and mother. The strength that belongs to her children must not be wrung from their mother by unnecessary toil and drudgery. A race, vigorous in body and mind, cannot spring from homes where contentment is a stranger and where modern conveniences are longed for, but denied. The mother must love her home, but the home provided for her must be worth loving.

Modern Conveniences Found Mostly in Urban Homes

Modern ingenuity has done much that may be installed in kitchen and basement

to relieve the wife of unnecessary drudgery, but these conveniences are confined mostly to urban homes. The country is just awakening to the importance of improvement in its home life. But comparatively few country homes as yet, however, are equipped with household utilities that are much in advance of what our grandmothers used. The family washing, the ironing, the churning, the water carrying and the outhouses all bear the brand of a past age, as also does the dooryard with its flowerless and shrubless expanse.

Can a spirited woman take joy from such medieval equipment and surroundings when her urban sisters are enjoying modern conveniences and delightful surroundings? Can children reared under such soul sombering environment, take a just pride in their father's mode of life and love their father's vocation? Is it any wonder that the mother's and children's longing for social contact with their kind under conditions more congenial, should finally overcome the father's greed for money and effect a change from country to city residence? And has not the time arrived for this human current, flowing from country to city, for reasons above stated, to have about run its course? The problem is, How shall this exodus from the rural districts be checked? There is manifestly but one solution.

The One Solution

The country home must be made, all things considered, as desirable a place to live and labor as the city. It must be made more of than a place for mere making money. The country home must be equipped with labor-saving devices, just as the farm is equipped with labor-saving machinery. The contentment of the family should be made the first consideration and the comfort of the wife and children become a rural husband's first concern. The country owes to itself the necessity for taking the initiative in creating a home life, the equipment for which

shall be equal in sanitation, convenience, and modern comfort of that prevailing in the average city home. Moreover, the country home at but trifling expense may be made vastly superior to the average city home, in its exterior surroundings. The country-side has superior natural advantages which should be developed to the utmost. This work of improvement should begin now and become general. However devoid of taste and labor-saving devices traditional country life may have been, a new and more hopeful tradition should be established at once.

Importance of Agriculture

The vocation of agriculture is fundamentally related to the prosperity of the state. Civilization depends upon it. Commerce, business, transportation, the professions, all depend chiefly upon agriculture. The hungry millions look to the farms for their daily bread. The mills and factories derive from the soil the crude material for the manufacture of the world's clothing, the elaboration of which gives employment to millions of skillful hands. Agriculture is the foundation rock upon which our nation is built. It stands like a guardian angel between life and death, the world over. It is God's annointed for the physical happiness and well-being of all His children. It is the single vocation that Heaven ordained and for which the creative energies of God were devoted thruout the ages the earth was building. And shall those who labor in this vocation, who feed and clothe mankind, who distend with their products the world's commerce bear the stamp of social or intellectual inferiors?

Must Also Distribute

Whatever the answer, the centuries prove one incontestable fact; that agriculture may make tremendous strides in scientific farm management, but unless it also gives intelligent attention to rural finance and to co-operative distribution of its products, the prosperity resulting from increased crops will largely accrue to those who "toil not; neither do they spin."

But first of all the traditional stamp of inferiority must be effaced by those who live in the open country. The farm can and must be made the symbol of dignified labor, of the best there is in life—physical, mental, and spiritual. Politically, the agricultural class must assume its rightful proportion of power and influence in the

management and control of its own and of public affairs, generally, if it would emancipate itself from fetters it has no right to wear, much less to bequeath to its children. The "helpless majority" should speedily be relegated to its appropriate chapter in ancient history. The farming class, therefore, owes to itself not only for the sake of its children, but for the stability and glory of the state the necessity of wielding an intellectual influence in proportion to its numerical strength and economic importance in order to maintain a proper equilibrium of social and political power. For agriculture, being comparatively free from the intrigues and corrupting vices that breed in large centers of population, its political energies with small likelihood would ever be converted into oppressive measures, either to oppress the poor or wrongfully to despoil the rich.

It is not expected nor advocated that rural communities shall ape the tinsel of surface mannerisms too often begotten of inherited wealth, but surpass, rather, in those fundamentals of conduct which make for solidity of character and spiritual uplift in community life.

The Rural School

The rural schools should be consolidated, as is fast becoming the rule in some of the older states. Instead of the one-room school house with its imperfectly trained teacher, usually a girl to whom country life at best is repugnant, a graded school should be substituted. This, with several teachers and workshops and laboratories for teaching, (in conjunction with the three R's,) agriculture and domestic science. Moreover, the instructors should not only consist of experts in teaching those subjects which relate the pupil to his home life and to home duties, but she should be in hearty sympathy with those subjects. The pupils should be made thoroly acquainted with Nature and her forces as well as with arithmetic and grammar.

With country schools thus organized to prepare country children to appreciate country life and to train them in the elements that underlie agriculture and homemaking, a different viewpoint will obtain toward country living. Moreover, the consolidated rural school will naturally become the social center for the grown-ups and the playground for the children of the entire community. The agricultural club will use it as a central meeting place. Hither the children will gather in winter for literary exercises and in summer for picnics. Here will be a common gathering-place to discuss political, economical and civic questions, for religious services and for amusements.

A Good Market for Brains

In many ways, rural life can be thus improved and made desirable and its opportunities made such that it will offer the

best of all markets for brawn and brains. Moreover, the real statesmen of the country—not the mere politicians, however, see in improved agriculture and a desirable country life the hope of the Nation. They realize that cities are not only non-productive but wasteful and breeders of vice and extravagance. The influence of the country, properly directed, tends to correct these evil influences. Instead, therefore, of educating our country youth

longer in terms of city thought, the tide is turning toward agricultural education which is offered in terms of country life and country thinking. And this for the reason that the chief source of all our wealth should not be jeopardized, but instead be inherited by men and women not only superior intellectually but specially trained for the purpose of safe-guarding the very foundation of our state and national prosperity.

Sanitary Floors for the Dairy Barn

Method of Laying Concrete Floors With Farm Labor

In the voluntary movement of farmers for better milk at better prices, the first step toward improvement is the making of the barn more sanitary by laying concrete floors. The method is so simple that any man can do his own work. The cost is so small and the cash returns are so great that the floors soon pay for themselves in preventing the breeding of flies, in the saving of liquid manure, in the reduction of labor, and in the increased flow and improved quality of milk. The plan described below is for a barn in which the two rows of cows stand heels toward each other, with a driveway between. It is easily modified to the opposite arrangement. Likewise the method is adaptable to both old and new barns.

Planning and Grading the Floor

For average conditions lay out the stalls on 3-foot 6-inch centers and 4 feet 6 inches in length from 6-inch manger wall to drop gutter. The manger is 2 feet 6 inches wide at the top and 2 feet at the bottom, with one face sloping up to the feed-alley floor. The depth is 7 inches, measured from the stanchion setting, and 8 inches from the alley floor. The feed alley is 4 feet 6 inches wide. The drop-gutter has a width of 18 inches. It is 8 inches deep gauged from the stall floor, which is 2 inches higher than the 8-foot driveway. For establishing grade lines a carpenter's spirit level (or a water level) and a chalk line are very helpful.

To prevent possibility of the floor settling, remove all manure before grading the surface of the earthen floor. Carefully tamp back the dirt around water pipes and the drains which carry waste water and liquid manure to the water-tight concrete manure pit. Do all filling as long as possible before building the concrete floor. As a foundation for the stall floors proper, place a 6-inch thickness of coarse broken stone or screened gravel to keep the floor from direct contact with the ground. Since the stall floors are of prime importance, it is well to make them first,

During this operation the unpaved driveway and alleys can be used as working space. Then finish, in order named, the feed alleys, the driveways, the mangers and lastly the gutters.

Mixing and Laying the Concrete

For the plan given, 5 feet 6 inches from the center line of the driveway stake on edge (and to line and grade) a 2 by 12-inch plank, to serve as a form for the stall floor at the gutter. Likewise set a similar board, 5 feet distant, to mold the 6-inch manger wall and stanchion setting. Bear in mind that the stall floor has a slope of 1 inch toward the gutter and that the stanchion setting rises 7 inches above the stall floor. Drainage for gutters and mangers will be provided by sloping their concrete bottoms.

Proportion the concrete 1 bag of Portland cement to $2\frac{1}{2}$ cubic feet of sand and 5 cubic feet of crushed rock, or 1 bag of cement to 5 cubic feet of clean pit gravel. At one operation lay the full 5-inch thickness of the stall floor and finish these stalls the same as one section of sidewalk. No surfacing mortar is needed. For setting patented stall divisions, follow the manufacturer's directions; for home-made divisions, make mortises by tamping the concrete around greased tapering wooden cores, which are withdrawn as soon as the concrete stiffens. A wooden float is best for finishing the floor. A steel trowel yields a surface entirely too smooth, and such a finish should always be roughened by brushing with a stable broom.

While the concrete of the three stalls is still soft, mold the stanchion setting (6 inches thick) upon it. As forms use the projecting 7-inch height of the 2 by 12 piece already in place and two 1 by 6-inch boards toe-nailed together so as to provide another 7-inch height and a bearing place to rest on the green concrete. These forms may be made dish-shaped for swinging stanchions. Fill the forms with mushy wet concrete, trowel the surface, round the corners, and set the stanchion

holders. Repeat the operation until all stall floors are completed. The feed alleys and driveway are easily built: they are merely rough-finished sidewalks. Place the waste-water outlets in the mangers at intervals of 28 feet and give the bottom a slope of 1 inch toward each outlet for a distance of 14 feet on each side of it. The drop gutters may be drained in like manner or can be sloped slightly in one direction for their full length. For ease in cleaning, round all angles and corners (except at the bottom of the drop gutters) by applying a 1 to 2 cement-sand mortar immediately after removing the forms.

Caring for Cattle and Floor

Regardless of the kind of floor, bedding of straw or litter is an absolute necessity: it keeps the cow clean and absorbs the valuable liquid manure. If the help can not be depended on to bed the cows properly, it is advisable to use a removable wooden grating or platform. Cork bricks also give satisfactory results, but are somewhat expensive. They are set in a 2-inch depression in the floor and are held in position on all sides by the concrete acting as a curb.

With the proportions and thickness given above, 4 bags (1 barrel) of cement, 10 cubic feet of sand (say three-eighths cubic yard) and 20 cubic feet of crushed rock (about three-fourths cubic yard) will lay 45 to 50 square feet of floor. The usual cost of this much material alone is \$2.50. The floor soon pays for itself many times over.

ANIMALS AND ANIMAL PRODUCTS

With the provision made by Congress the breeding of horses suitable for army use will be extended during the coming year, but a good start has already been made, and it has been demonstrated that farmers owning mares of a satisfactory type are willing to have them bred to Government stallions on the terms proposed by the Government. The stallions were stationed in Virginia and during the year 38 mares were bred and 11 foals produced. It is too early to report on the foals, but it is hoped that with the extension of the service a considerable number of horses suitable for army uses will be available. The horse-breeding investigation in Colorado, Vermont, and Iowa

have been continued with good progress. Carriage horses are being bred in Colorado and there are 22 stallions and 55 mares in the stud, and of the 14 foals produced 11 are alive and thrifty. The Morgan horse farm at Middlebury, Vt., has 19 stallions and 44 mares, and during the breeding seasons farmers had the opportunity to breed the Morgan stallions under the provisions of the army-horse plan. The co-operative gray draft horse breeding at the Iowa Experiment Station produced four foals.

Good results were obtained in the breeding of Holstein cattle in co-operation with the North Dakota Experiment Station, and a substantial increase in the production of milk and butterfat was made in the co-operative experiment in breeding milking shorthorns at the University of Minnesota. Experiments in sheep-breeding are being carried on in Wyoming, Vermont, and Maryland, and experiments in goat breeding to obtain a strain of milking goats was also conducted on the Bureau of Animal Industry's farm at Beltsville, Md.

The experiments in breeding Barred Plymouth Rock fowls of increased egg-production, which have been conducted at the Maine Experiment Station, are approaching a close, the final solution of the main features of the problem of the inheritance of egg-production having been reached. Studies in the commercial fattening and marketing of poultry in the West have been continued and some of the

results published. Egg-production and marketing have received much attention with a view of lessening the losses from bad eggs, which are estimated to amount to \$45,000,000 a year, and publications have been issued showing the advantage to the farmer and the consuming public which would accrue from the production of infertile eggs and the adoption of the so-called "loss-off" method of buying.

Practically all the cities in the country are using some form of score card, and the health authorities of the country generally are seeking to give the public a higher grade of milk than the public is demanding or is willing to pay for, and the attempt is too often made to put the entire cost of improvement on the producer. Some of the handicaps to obtaining a milk supply of good quality are that the municipalities fail to provide sufficient funds, the inspection work is sometimes dominated by



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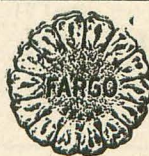
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politics, and consumers fail to appreciate the fact that the production of clean milk involves additional expense, and offer no incentive to the producer by patronizing those whose milk is clean and consequently commands a better price.

Recommendations are made by the chief of the Bureau of Animal Industry concerning a system of inspection of dairy products. Investigations during the year show that inspection of dairy manufacturers is very desirable. They showed 61 per cent of the 5,154 lots of cream inspected were dirty, decomposed, or sour, and that 94.5 per cent of the creameries visited were insanitary to a greater or less degree. The dairy research laboratories have shown that butter made from sweet pasteurized cream, aside from the commercial advantage of better keeping quality, is much safer for human health than butter made in the usual way, as pasteurization removes the danger from disease germs that are liable to exist for a considerable time in butter made from unpasteurized cream.

One hundred and sixty-four thousand square miles in the Southern States have been cleared of the fever tick, this is nearly one-fourth of the total territory infested at the time the eradication work was begun. It is evident that the days of the ticks are numbered and that the South will have a large part in meeting the demands for a greater meat supply. The eradication of scabies of sheep and cattle in the West is nearing completion, and the stamping out of dourine among horses in certain sections is progressing favorably. Vaccination of cattle to prevent tuberculosis cannot be recommended as safe, as such vaccination involves the use of living tubercle bacilli of a mild strain, which sometimes remain in the vaccinated cattle for some years, and are discharged in the milk.

Rabies is a continued menace to both human and animal life, and the best known means of getting rid of the disease is the

muzzling of all dogs for a sufficient length of time to eradicate the disease. Among other diseases investigated were forage poisoning or cerebrospinal meningitis, swamp fever, tetanus, chronic mastitis, and Malta fever. It is very important to eradicate this last disease from goats, especially, since there is a growing tendency to use goats' milk as a food for infants and invalids, as the disease causes serious illness in man, altho passive in goats.

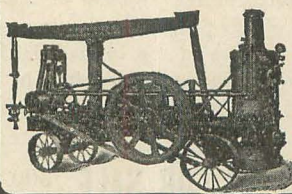
The regulations of the Secretary of Agriculture for the inspection and quarantining of horses, cattle, sheep, swine, and other animals imported into the United States, issued under date of April 5, 1911, effective upon the same date, as amended by Amendment 1 to B. A. I. Order 180, issued under date of April 29, 1912, are hereby modified by following regulations, which revocation shall take effect at once, and the regulation given below shall become and be effective until otherwise ordered:

Regulation 3. All horses imported into the United States from any part of the

world, except North America, shall be accompanied by a certificate from a duly qualified veterinarian giving a description and the distinctive markings of each animal, the name and address of the importer, the proposed date of exportation; the proposed port of shipment, the name and address of the consignee in the United States, and stating that the horse or horses to be exported have received a careful veterinary examination, and are apparently in good health and free from dourine (maladie du coit) and any other disease contagious to horses.

All horses imported into the United States from any part of the world, except North America, shall also be accompanied by an affidavit of the owner or owners, or person or persons in charge of the horse or horses for the six months preceding the date of their shipment, to the effect that during that period the animal or animals have not been exposed to any diseases contagious to horses; and that during the six weeks immediately preceding shipment the said animal or animals have been continuously located in the district whence

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moved for exportation, and indicating the localities in which the said animal or animals have been located during the period of one year preceding the date of shipment; also by an affidavit from the importer, or his agent supervising the shipment, to the effect that in transportation the animal or animals have not been exposed to any disease contagious to horses or animals of their kind; and that they have been transported in clean and disinfected cars or vessels direct from the farm or place at which they were purchased.

All horses imported into the United States from any part of the world, except North America, shall also be accompanied by a certificate furnished by the minister of agriculture, or other competent authority of the Government, to the effect that, in so far as it has been possible to ascertain, no case of dourine, glanders, farcy, epizootic, lymphangitis, or mange has occurred in the locality or localities where the horse or horses have been located within the preceding twelve months; and that a declaration has been received from the owner or owners, or person or persons in charge of the horse or horses, that the animal or animals have not been exposed to any disease contagious to horses during the preceding six months, and that during the six weeks immediately preceding shipment the horses or horse have been continuously located in the district from whence moved for exportation.

All horses imported into the United States from any part of the world, except North America, shall be required to pass a veterinary inspection at the port of entry by an inspector of the Bureau of Animal Industry. Such inspector shall not allow the landing of any hay, straw, or forage which accompany shipments of horses from any country on the Continent of Europe until it has been disinfected as the inspector may prescribe. In case the inspector finds horses affected with any contagious disease he shall isolate them and immediately report the fact to the Chief of the Bureau of Animal Industry, who may refuse to allow the landing of the horses so diseased. When horses imported from a country of continental Europe from which entry of hay is permitted arrive in a healthy condition and no disease is discoverable, the hay, straw, or other forage from such country may remain on board the steamer and be returned. This forage may be used without

disinfection in the feeding of animals exported on the same ship, provided it is accompanied by a certificate issued by the proper Government officer of such country, as required by the regulations of this department for the importation of hay and straw from continental Europe, and there are no indications that it is infected; but if the forage is considered to be infected the fact must be reported to the Chief of the Bureau of Animal Industry, who will direct the disposition to be made thereof.

All horses imported into the United States from any part of the world, except North America, shall be subject to quarantine by the Chief of the Bureau of Animal Industry, who may order the quarantine of such horse or horses at the port of entry in a stable approved by the inspector of the Bureau of Animal Industry at said port and under his supervision, at the expense of the owner, such horse or horses to be subject to such inspections, blood tests, or other tests as may be required to determine whether or not they are free from disease.

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ALFALFA ON EVERY FARM, THE SLOGAN FOR THE NEW ERA IN THE CORN BELT. KENT COUNTY, MICHIGAN, MAKES THE BREAK

On Tuesday morning the first educational automobile train ever attempted in the United States, dedicated to a farm-to-farm canvass, left Grand Rapids for a week's tour in Kent County, bearing with it Professor Perry G. Holden, the great Iowa corn expert representing the Agricultural Extension Department of the International Harvester Company of New Jersey, J. H. Skinner, Federal Agent for Kent County in the farm management service of the United States Department of Agriculture, and a dozen or more field men experienced in the growing of alfalfa. The object of this spectacular campaign was to spread the gospel of alfalfa, the most remarkable forage crop and soil enricher known to man; to show the farmers in their own fields the exact methods to be followed to meet local conditions; to demonstrate by the use of charts the value of this legume as an animal ration and a milk producer; to explain at first hand how to rejuvenate land which thru long years of

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cultivation had been run down by over-cropping; and in a broad way to bring to the farmer class in general, information already in the hands of agricultural schools and farm experts.

At the instigation of the Grand Rapids Chamber of Commerce, and backed by the newly formed Kent County Alfalfa Growers' Association, an invitation was sent to Professor Perry G. Holden, in whose charge has been placed the educational work of the I H C Agricultural Extension Department, to make the initial alfalfa campaign in co-operation with their organizations. That the time was just ripe for the undertaking was shown not only by the keen interest taken by everyone—preacher, teacher, merchant, physician, and all who lived along the route followed by the alfalfa special—but also by the pledges given by hundreds of farmers that within twelve months they would make a start in introducing alfalfa on their farms. At every stop the cortege was met by an audience varying from twenty to three hundred farmers, all eager to hear what they should do to increase the yield of their fields. A special Alfalfa Day was set aside for the schools, and local pastors preached alfalfa sermons. In many places the autos were met by a party of school children singing special alfalfa songs and waving flags.

Professor Holden addressed himself particularly to the young people, urging them to stick to the farms, but to farm with their heads instead of their hands. He showed them how a good business man always makes a good farmer, and a good farmer a good business man. He advocated the Saturday afternoon holiday for the farm boy as well as for the office boy. He urged the rapid and universal adoption of modern conveniences in the farm homes, such as electric lights, running water, bath tubs, gas and oil engines, and other devices which make city life so attractive to women.

It was shown thruout the trip that on the typical sand and clay loams east of the Mississippi alfalfa could be raised, yielding three crops a season and averaging from four to five tons to the acre; that it could be grown at a cost of less than \$5 a ton, and yet excelled in feeding value, as a milk producer, wheat bran costing over \$20 a ton; that it was twice as cheap as corn in putting fat on hogs, and yielded over twice as much per acre as either red clover or timothy.

To insure a good alfalfa stand in the Corn Belt territories, Federal Expert Skinner, who has been a successful alfalfa farmer in Michigan for years, told the Michigan farmers, first, to see that their soil was not acid, to prepare the seed bed well, not to use more than ten pounds of seed to the acre, to be sure and inoculate the seed with a pure culture of bacteria, or the ground with soil from a successful alfalfa field, or both, to plant it at the right

time, and they could be sure of a valuable and luxuriant growth of alfalfa. He assured them that those who had hitherto not made a success in growing this crop had neglected some one of these things. Alfalfa as a legume is not a native of the middle states, and almost invariably requires artificial inoculation; but he stated that this should not stand in the way of farmer's taking up this crop, as a quarter's worth of this bacteria was sufficient to inoculate six acres. The Michigan Agricultural College at Lansing prepares this culture for distribution, and with a growth in the demand for it other state institutions are planning the same service. The census of 1910 shows only 73 acres in alfalfa in Kent County, but at the close of the present campaign it was estimated that within two years there would be at least 10,000 acres set aside for this valuable crop.

Alfalfa has taken hold hard and strong in the Corn Belt, for scarcely had the big guns been fired at Grand Rapids than dozens of appeals from other counties were received not only by the Michigan authorities but by the I H C Agricultural Extension Department for their services in other counties. With the close of the Kent County campaign a similar undertaking was begun in Allegan County, Michigan. The Commercial Club of Toledo, Ohio, began operations at once for

BIG MONEY in the OFF SEASON

One Man can run it.

Earn \$2000.00 a year extra money, besides your regular farm work, with the

Improved Powers Boring and Drilling Machine. Bores a well 100 ft. deep in 10 hours. One man can run it; a team operates it and easily moves it over any road. Bores everything except hard rock, and it drills that. No tower or staking; rotates its own drill. Easy terms; write for catalog.

Lisle Mfg. Co.
Box 540 Clarinda, Iowa.



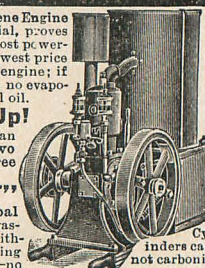
Use KEROSENE Engine Free!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing. No waste, no evaporation, no explosion from coal oil.

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Amazing "DETROIT"
—only engine running on coal oil successfully, uses alcohol, gasoline and benzine, too. Starts without cranking. Only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Engine tested before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric lighting plant. Prices (stripped), \$29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate the money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, you get Special Extra-Low Introductory price. Write! (138)

Detroit Engine Works, 385 Bellevue Ave., Detroit, Mich.



All Motor Cars
are best lubricated by

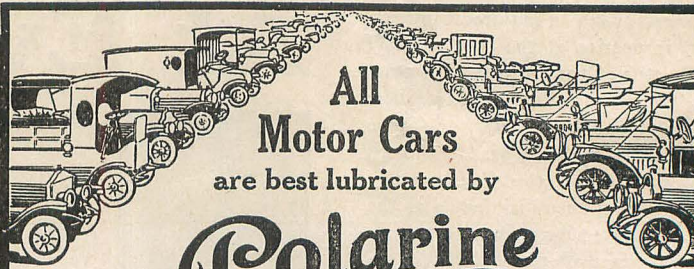
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FRICTION REDUCING MOTOR OIL

Maintains the correct lubricating body at any motor speed or heat.
The best Summer oil.
And the best Winter oil, because it flows freely at zero.
Polarine lubricates perfectly every make and type of car. It's the convenient oil—sold everywhere.
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Polarine
FRICTION REDUCING MOTOR OIL

(118)



a similar propaganda in the ten counties in the western border of the state. The work has already commenced, in the Middle West, in Williams County, Ohio, and about May 15th the invasion had reached Sandamon County, Illinois, where already many preliminary preparations have been made. It is prophesied that within a year alfalfa will be as well and favorably known east of the Mississippi as it is now in Montana, Kansas, and other western states.

Taking part in the campaign, either in an advisory capacity or as speakers, were the following members of the Agricultural Extension Department: C. M. Carroll, formerly with the Crop Improvement Committee; W. R. Baughman, a prominent rancher and alfalfa grower of Texas;

with which the grass on their golf ground is now cut in less than one-sixth of the time and at less than one-fifth of the cost at which it was formerly done.

The two-passenger body and rear system of this runabout are retained intact while the front is supported by a triple-armed frame which converges down to the axle running thru an iron roller two feet in diameter and three feet long across the chassis frame. A three-foot mower is attached in front of this roller and another at the left side of the car. These two mowers cut a swath six feet wide which, with the nominal speed of six miles per hour, would mean eleven acres per day of eight hours. Assuming that the cost of gasoline is twenty cents and oil fifty cents per gallon and the driver is paid three

handsome sum for the yearlings to compete for at the coming International. The Futurity principle is already so well established, and has met with such enthusiastic reception from the draft horsemen, both east and west, that detailed explanations are not necessary.

Futurities will be held this fall in the states of Iowa, Wisconsin and Ohio, and possibly in one or two other states. All of these will have an opportunity to come together in the International Futurity Stakes.

There will be classes for both stallions and fillies, in all four breeds, with at least twelve prizes, in each class, in the case of Percherons, and it appears likely that there will be at least \$600 to divide among the first twelve colts in each class. The entries should be made and entry fees paid



AN OLD AUTO CONVERTED INTO A LAWN MOWER

J. E. Waggoner, formerly of the Mississippi Agricultural College; R. W. Lamson of Iowa; J. E. Buck of Chicago; C. W. Farr, assistant county superintendent of Cook County, Illinois; the Hon. G. H. Alford, of Georgia; and C. H. Allen, a retired banker of Ohio.

AN OLD-TIMER

Hardly a day passes but what we hear of some unique conversion of the motor of the Reo of the vintage of 1905-1906 or 1907 into a power plant for a hay-blower, corn sheller, farm tractor, threshing machine, hoisting apparatus, delivery truck or a score or more of other interesting contrivances, says R. E. Olds, President of the Reo Motor Car Company. Yesterday we learned of a 1907 Reo runabout having been converted into a mammoth lawn mower by the Quincy Country Club

dollars per day the cost per acre would be less than thirty-five cents. Here is another explanation of what becomes of our older cars while it is also a convincing reminder of the promise we made in 1907 that our cars were all built for six years or more hard wear.

FUTURITY CLASSES AT INTERNATIONAL

Final arrangements have been made for the Futurity Classes at the International Livestock Exposition in 1913. The International Livestock Exposition has appropriated \$200 for each of the four draft breeds and the Record Societies have appropriated a like amount, so that the stakes already amount to \$400 on each of the four draft breeds. This plus the money received from exhibitors who make entries in the Futurity stakes will make a

to the respective breed secretaries.

Parties desiring to enter Percheron colts in the International Futurity stakes for 1913, should address Wayne Dinsmore, Secretary of the Percheron Society, Union Stock Yards, Chicago; for Clydesdales, address Robert B. Ogilvie, Secretary of the Clydesdale Association, Union Stock Yards, Chicago; for Shire colts, address Charles Burgess, Sr., Secretary of the Shire Association at Wenona, Illinois; and those desiring to enter Belgian colts, will address J. D. Conner, Jr., Secretary of the Belgian Association, Wabash, Indiana.

Printed blanks are in the hands of each of the Secretaries, and are available on request.

The preliminary entries close June 1st, second payment August 15th, and final payment October 1st. The first payment is \$2.00, second \$1.00 and closing payment \$2.00.

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The increased yield of corn, the result of knowing the effect of shallow as against deep cultivation will, in a single year, pay the cost of maintaining all the agricultural colleges of the United States for a quarter of a century.

The total number of co-operative societies in Japan in June, 1909, was 5149. In 1912 it had risen to 9394, of which 2676 conducted credit business exclusively. The total number of the members of the 9394 co-operative societies in June, 1912, was about 980,000—80 per cent of them being farmers.

Farmers who have a hobby of leaving their implements out in the rain or snow of winter in order to give them an ancient appearance should feel much gratified over the state of the weather this year because there has been plenty of rain and snow and nothing will cause the metal parts of the machinery to turn brown with rust or cause the wood to lose its paint as have the steady downpours of this most unusual season. Now the plow and the harrow and the cultivator are in fine condition—for the junkpile.

If half the damage done by gophers were to be inflicted by the neighbors' livestock, the court calendars would be kept overcrowded with damage litigation, year in and year out. The little gophers do no large amount of damage individually, but collectively they destroy many millions of property every season. However, they work so insidiously that but little attention is given to them and little or no concerted effort is made looking toward their extermination. Another case where co-operation would win but lack of it spells millions of loss every year

Not long since inquiry was made of boys and girls above the fourth grade in 34 rural schools in Iowa as to their intentions as to farm life when grown up. Of the 164 boys, 157 replied that they would have nothing to do with farming, and 163 of the 174 girls made a similar reply.

After 3 years of instruction in elementary agriculture and home economics, the organization of rural life clubs, and the teaching of elementary agriculture and home economics in regular and daily class work, the question was repeated. Out of 174 boys, 162 of them answered that they were going to stay on the farm.

If there was any way under Heaven to bring agriculture practice up to its highest standard and at the same time, conserve the state's natural resources, except by making ample appropriations to be used by the agencies specially commissioned to do that work, farm management would be going forward by leaps and bounds. The trouble is that just to improve farm practice is short of the mark. There is no question but that even the politicians—whom the people owe vastly less than they owe the people—stand in their own light by dealing niggardly with problems of such vital importance as agricultural education and agricultural extension.

"More farmers and less distributors is the greatest need of the country at this time," declared ex-Secretary Wilson of the Department of Agriculture. Secretary Wilson contends that one man can do the distributing that twenty men are engaged in doing and do it just as satisfactorily. The fact is that too many boys are being educated with the view of making their living off some other fellow. That is why the cost of living continues to soar skyward. And it will continue to do so as long as we continue to educate our young people by means of the dead languages instead of by the productive sciences. What the country wants is more producers of sufficiently broad vision to otherwise exert the influence of strong characters upon the political and social affairs of the state.

North Dakota will prosper exactly in proportion as her farmers engage in raising and feeding livestock. From this conclusion, there can be no escape. And what is essential to the prosperity of the state as a whole is equally essential to the prosperity of the individual farmer. The profit in small grain depends almost entirely upon the largeness of the yield; the largeness of the yield depends upon the strength of the soil; and the strength of the soil depends upon the recompense it receives for the service it renders. As a team must be well fed and well groomed that it may render efficient service, so a farm must be well fed with manure and leguminous crops to recompense it for the

fertility annually drawn out of its soil, but without livestock, the manure will not be available and the leguminous crop will be shorn of its chief value.

It is claimed that the greatest contribution that J. Piermont Morgan made to mankind was not his wealth or genius, but his creed which was written in the preamble of his will. Coming from J. Pierpont Morgan it is certainly a remarkable contribution, yet thousands of washerwomen, road graders, and men and women in the common walks of life have expressed all that and more, in their daily lives, without ever having enjoyed a taste of ease or luxury. Viewed from the standpoint of old-fashioned Christianity—the kind that emanated from Galilee, the contribution of Mr. Morgan is commonplace. But viewed from this highly enameled age where religion and business work alternately, too often, it does merit more than a passing notice.

The fanning mill is one of the most useful implements on the farm. In proportion to its cost and ease of handling, the fanning mill plays a bigger part in improving the yield and quality of grain than almost any other piece of farm machinery. And yet there is but little mention made of the fanning mill in agricultural bulletins. Moreover, many farmers manage, somehow, to get along without an up-to-date fanning mill. The tons of dirt and foul seeds such farmers ship out of the state—and pay the freight on it—and the dollars they pay for these foul seeds when they come back again ground up with the bran—and pay a big price for it—would seem to be sufficient argument to induce every farmer to purchase a first-class fanning mill—and use it.

If the agricultural colleges of the country had begun their splendid work twenty years earlier many of the men today eminent in law, medicine, and merchandizing would not boast of being "country bred." No, they would have won equal if not greater honors as breeders of improved livestock and as progressive farmers. Had the automobile, the rural free delivery, the parcel post and telephone been in operation then as now and had agricultural education been given the prominence it now occupies, so many of them would not have been lost to the country where they naturally belong. With improved farm machinery, prospects for co-operation in marketing the products of the farm and a system of rural credits that will place the borrowing farmer upon an equality with railroad and business men generally, then the flower of our country youth will not drift into the cities where they are not needed but they will remain in the country where they naturally belong.

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade.
ASK YOUR GROCER FOR THEM.

"BUY"

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HOME BRAND

Pure Food Products

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Griggs, Cooper & Co.

MANUFACTURING
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GROCERS,

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NUTRITIOUS-WHOLESOME

One package, 10 cents, makes one pint of wholesome Fruit Jelly. All flavors from true fruits.

The Purest of Pure Food Products

are packed under the Brands of

Nokomis
PURE FOODS

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FOOD PRODUCTS

A GUARANTY OF PURITY. A WELCOME GUEST at every table where the HOUSEWIFE demands the BEST. THE MONARCH LABEL insures QUALITY in Coffee, Catsup, Pickles, Maple Syrup, Canned Goods or any article bearing the MONARCH BRAND of REID MURDOCH & CO CHICAGO

ANOTHER PURE FOOD PRODUCT

CEREKOTA

Self-Rising

Pancake Flour

Is a Scientific Preparation of Healthful Appetizing Ingredients and the Best Flour Milled in North Dakota

GUARANTEED Pure and Wholesome

Ask Your Grocer for a Trial Package

Bemmels Milling Company

Sole Manufacturers

Lisbon,

North Dakota

Livestock Department

FARM AND STOCK NOTES N. J. Shepherd

Consider your market as well as your crop.

Keep lambs growing. They rarely recover from a set-back.

Young pigs will never thrive well in a filthy pen.

The horse needs daily exercise and likes a variety of food.

Decaying organic matter in the soil adds to its warmth.

It is hard to regain a milk flow that has once been lost.

There is money in raising horses only when you raise good ones.

The more time it takes to put on flesh the more it costs.

Heavy feeding is the only way to secure good net profits from dairy animals.

The best floor for poultry is the bare earth, kept dry and clean.

Other things being equal, the heartily feeding animal is the best to buy.

In order to induce cows to consume food freely, it is necessary that they should have palatable foods.

When you are obliged to drive a hog to his feed you may know something is wrong with his feeding.

Excitement not only checks the flow of milk in a cow, but reduces the percentage of fat in the milk.

New varieties of fowls should not take the place of the old unless you are certain the change will be for the better.

A handful of linseed meal, fed to horses, two or three times a week will aid materially to regulate the system and promote health.

That which is easily and quickly produced is just as easily and quickly lost by neglect of the conditions that produced it.

A wet bed is very likely to bring on rheumatism and this is one cause why so many young pigs are stiff and lame.

A mixture of six parts wheat bran and one part oil meal is very palatable and one that the calf will learn to eat.

Study the individual cow and feed her according to her power of turning food into finished products. It will pay to feed certain cows much more than others.

In order to judge whether an animal is profitable or not it is necessary to know the amount of milk she gives and the percent of fat it contains.

Matched teams so far as appearances go, are very desirable upon the road, but to the average farmer it is more desirable to have the teams mated equally in gait and strength.

Fancy prices are only paid for fancy horses. If you expect to get the top of the market you must have the best kind of horses to offer. The only way to get the best kind is by breeding good mares to good stallions.

The first eggs of the litter are always the best for hatching. After a hen has produced twenty or thirty eggs in perhaps as many consecutive days, the strain upon her strength is so much that the eggs become impaired in vitality.

THE VALUE OF SKIM MILK FOR FEEDING FARM ANIMALS
Prepared by Thomas X. Calnan
Under Direction of Prof. W. B. Richards

Whole milk is a very good food, for it contains all of the ingredients needed for nourishment, that is, it furnishes the nutrients which build up the body and keep it in repair, and also those which sup-

IF YOU WANT

ANGUS CATTLE
OXFORD DOWN RAMS
EMBDEN GEESE
WHITE
HOLLAND TURKEYS
BLACK RABITS

GET OUR EXPRESS-PAID PRICES

WILLOBANK FARM, LARIMORE, N. D.

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One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

LIVE STOCK

FOR SALE

GALLOWAY CATTLE
J. W. & F. T. PETERSON, Litchfield, Minn.
POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amenla, N. D.

HOLSTEIN, GERNSEY OR JERSEY CALVES FOR SALE
Usually a few of each breed from three to six weeks old showing fine breeding; tho unregistered. Price only \$17.50 each, males or females, crated and delivered to express company. Approximate express rate furnished. Heifers and cows always on hand. Paul E. Johnson, South St. Paul, Minn.

FAMOUS O. S. C. SWINE. Am now booking orders for fine pigs of April farrow. Price: \$18 each; \$35 a pair. All Stock recorded free. Shipping point: Mankato.
ROBT. A. HAEDT, Eagle Lake, Minn.

ASH GROVE FARM-Knudtson & Son, Props.
Breeders of Pure Bred Percheron Horses and Short Horn Cattle, Both Sexes.
Route 1 Fullerton, N. D.

J. S. BIXBY

RED POLL CATTLE. If you want dual-purpose cattle, I have the best. Rhode Island Reds, also in stock. LISBON NORTH DAKOTA

FOR SALE. Work Horses, Drivers, Stallions and Double-standard Polled Durham Bulls.
LEAL STOCK FARM Leal, N. D.

Purebred Registered
HOLSTEIN CATTLE
The Greatest Dairy Breed
Send for FREE Illustrated Book
Holstein-Friesian Asso., Box 135 Brattleboro, Vt

ENVILLA STOCK FARM

Envilla Stock Farm, Cogswell, N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat Dogs and other breeds, Angora Cats. All varieties of chickens: turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Eggs for Hatching. Parcel Post or Express. Guaranteed safe arrival. Fertile from Pure Bred stock. Packed in light baskets.

MISCELLANEOUS

WANTED for cash, Young Foxes. Envilla Stock Farm, Cogswell, North Dakota.

WANTED: A Newfoundland male pup.
ALBERT JAQUA, Tokio, N. D.

AGENTS WANTED. Farmer's Directory, Account Book. Exclusive home territory. Easy seller. Big inducements. Particulars Free. Write Naylor 938 Ft. Wayne, Ind.

ALFALFA SEED. This seed has stood the test of many winters in this climate. There is none better. Write for price and sample.
J. L. MAXSON South Dakota

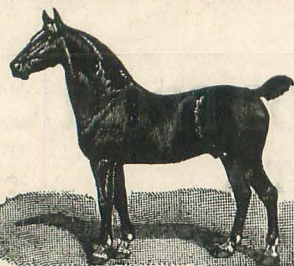
Buffalo Gap
FOR SALE. Creamery in first class condition at a bargain at Crystal, N. D. For further information write to
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One Load of High Grade
HOLSTEIN SPRINGERS
L. H. Field
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Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
Ringbone and other bony tumors.
Cures all skin diseases or Parasites,
Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
Warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
its use. Send for descriptive circulars,
testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

ply it with fuel to keep it warm and to furnish the animal machine with the power needed to do its work. Milk contains 84 to 90% water and from 10 to 16% solids. The solids are: protein, fat, carbohydrates and mineral matter. About one-twentieth of the total solids are minerals; one-fourth protein, three-fourths fat and four-tenths carbohydrates. The digestibility of milk makes it of high feeding value, for the value of any food for nutriment depends not only on how much of the nutrients it contains, but on how much of these the body actually digests and uses for its support.

There really can be no positive statement laid down as to the percentage of the several nutrients in milk, this varying with the different breeds of dairy cattle, however, the protein, carbohydrates and ash remain nearly the same, but the fat varies from 3 to 6%. Sometimes milk may run a little lower than 3% in butterfat, but rarely if ever, does it go higher than 6%.

Now, however, we are concerned chiefly with the feeding value of skim milk, when fed alone and in combination with other feeds. In a general way, I have mentioned the relative ratio of the different nutrients or constituents to each other, but in order to make this plain I will give the percent of each nutrient, as found by others, in whole and skim milk.

Whole Milk	Skim Milk
Water.....87%.....	90.5%
Fat.....4%.....	3%
Ash......7%.....	.7%
Protein.....3.3%.....	3.4%
Carbohydrates..5%.....	5.1%

So we see that the nutrients, with the exception of fat, are nearly the same in whole and skim milk.

Skim milk has some feeding value for dairy cows, but it has never been found advisable or profitable to feed skim milk to them, for most cows will refuse to consume it, even when fed with concentrates. Only about 17% of the cows are willing to use skim milk as food. At the Connecticut station skim milk was fed to four dairy cows, and was substituted for half the grain in the ration at the rate of 8 pounds of milk for 1 of concentrates, and about 1 ton of milk was fed to each of the four cows. Feeding the skim milk caused a small increase in milk flow and a saving of grain, which taken together gave to the milk so fed a value of 19 cents per cwt.

There has been, and still is, much objection to feeding colts skim milk, for it is claimed that this skim milk causes wind-suckers, and that colts brought up on it will not be of much use when they get to be two or three years old. However, skim milk is fed a great deal to colts and even to grown horses in some countries, and it has been found that 10 pounds of separator skim milk has a feeding value equal to 1 pound of grain, for horses.

The feeding value of skim milk for calves cannot be compared with other feeds, at first, for a young calf must have milk and will not live on concentrates only. Experiments on the growing of calves on skim milk have been carried on quite extensively, and these experiments showed that during the first 20 to 30 days it required 7.9 pounds of milk to produce 1 pound of gain, and during the first 20 to 30 days the average daily gain was 2 pounds. From 30 to 40 days the calf required 9.5 pounds of milk for one pound of gain and made an average daily gain of 1.8 pounds. From 80 to 90 days it required 18 pounds of skim milk for 1 pound of gain and that the calf gained 2.3 pounds daily. The experiments show that as the calf gets older it requires more milk for 1 pound of gain, but that the average daily gain is about the same from 20 to 90 days.

Hay tea has been used to some extent as a substitute for skim milk, but always

with poor results. In making this 12½ pounds of hay boiled, will make about 100 pounds of tea. This tea is fed to the calves with kafir meal, wheat middlings and oil meal for concentrates. The calves fed Alfalfa Hay Tea gained but .4 pounds daily, while those fed mixed hay tea gained .9 pounds daily. So we see that the returns are much poorer than the results obtained from feeding skim milk. It was found by experiment that it is poor economy and poor practice in feeding to use a highly nitrogenous product like oil meal, in combination with separator skim milk, for corn meal, bran or barley will give better results and are cheaper feeds. Otis found that calves averaging 77 pounds at birth and fed on skim milk, grain and pasture, attained an average weight of 659 pounds at the end of twelve months, showing an average daily gain of 1.6 pounds for the entire period.

The feeding value of skim milk for

Clear Fir Silo at 40% to 60% Saving

Buy your silo of us, and you buy *direct*, not only from the *maker* but from the *lumber producer* as well.

We own forests, railroads and six big mills

There are thousands of acres of timber in our tracts. The fir is the finest in the land. Tall, straight and close of grain. Only the choicest goes into Seattle Silo Staves. They show no knots, sap or other defects. Do not warp, shrink or swell. The toughest, best wearing wood in existence. All the cutting, logging and manufacturing of this timber is handled by us. One continuous operation. One overhead expense. Hence the big saving that we effect in producing cost—and why we save you 40% to 60% on a silo of better quality. Mail the coupon for catalog.

Seattle Silos

have patented swinging doors

These are far the best silo doors ever devised.

Quick detachable with special iron cross-bar or hoop connection. The steel bars on the door provide a solid ladder from which hoops can be tightened—the result of a new invention. They close absolutely air-tight. Cannot stick or bind—never have to be lifted. They swing in or out readily on their hinges.

When silos are ordered without additional lumber to make full cars, we can usually arrange to ship with other cars to nearby points.

To one farmer in every township we offer the chance to get a silo, at a great saving, by helping get together a carload order.

Mail the coupon today.

Save 40% to 60% on Lumber and Millwork

Five middlemen come between the mill and you when you buy of your local lumber dealer. All get a fat profit; no wonder lumber is high. We put an end to this hold-up game. Sell you direct. Give you better materials at our mill price. Save you 40% to 60%.

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calves depends a great deal on the regularity of feeding and kind of skim milk fed. I believe that separator skim milk, if fed when warm, and while it still contains the animal heat, will have a higher feeding value than when allowed to cool, and heated again to the same temperature, mechanically. Of course, this is a question of dispute, and as far as I know there has never been any experiments carried on to show whether or not there is any difference. However, if there is a difference, which I believe there is, and which make the mechanically heated milk of lower feeding value, it is probably due to the passing off of certain acids or gases, while the milk is cooling, which are of value to the calf, and which are lost if the milk is allowed to cool and again heated mechanically. So I believe better results will be obtained if the milk is fed while it still contains the animal heat.

Trials have been carried on by feeding pigs skim milk alone and in combination with other feeds in which it was shown that there was a great loss, financially, by feeding young pigs entirely on skim milk. Young pigs fed 19.7 pounds of skim milk only made an average daily gain of .72 pounds, while pigs fed on 17.2 pounds of skim milk and 2.2 pounds of grain made an average daily gain of 1.28 pounds. Pigs fed on 2.1 pounds of grain only gained .47 pounds daily, so we see the economy of feeding grain and skim milk together in their proper proportions.

At the Wisconsin station it was shown that when properly combined with concentrates 500 to 600 pounds of separator skim milk had a feeding value for pigs equal to 100 pounds of corn meal. About 3 to 4 pounds of skim milk should be fed to 1 pound of corn in order to get the best results. Separator skim milk has a feeding value of 24 cents per 100 pounds, for hogs, provided not over 3 pounds of skim milk is fed with each 1 pound of corn. Of course, the value of skim milk for hogs will vary as the price of corn fluctuates above or below the average standard.

THE FEED AND CARE OF HOGS

We find tankage, meat meal, linseed oil meal, skim milk, buttermilk, bran, oats, middlings, shorts, soy beans, clover and alfalfa are the logical supplements to corn in the middle west. At the Iowa Station was found that most excellent rations for gilts carrying litters are:

1. Corn 88 to 90%, meat meal or tankage containing sixty per cent protein, 10 or 12%.

Young man, would you accept and wear a fine tailor-made suit just for showing it to your friends? Or a Slip-on Raincoat Free? Could you use \$5 a day for a little spare time? Perhaps we can offer you a steady job? Write at once and get beautiful samples, styles and this wonderful offer.

Banner Tailoring Company, Dept. 321, Chicago

North Dakota Farmer: Fifty Cents a year; 3 yrs., \$1.00. Agents wanted.

2. Corn 75%, finely cut clover or alfalfa 25%.

3. Corn 80%, oats, chopped clover or alfalfa 10%, meat meal or tankage 10%.

For old sows the proportion of meat meal or tankage can be cut down practically one-third to two-fifths and still get excellent results.

Stronger, healthier litters having more hair, more color and more bone have been the result whenever we added a suitable protein and ash supplement to corn. When we selected our supplements wisely we also got cheaper pigs. At present prices for purchased protein and ash supplements, meat meal and tankage are our cheapest sources.

Above all things, excepting the food supply only, an abundance of exercise is most important. All classes of pregnant

animals do well only when abundant opportunity for exercise is allowed. The general tone and vigor of the mother is reflected in the offspring; the better the general health and condition of the dam, the stronger and more vigorous the young. Range on pasture is perhaps the best of all. Allow the sows to follow cattle for awhile but be sure to remove them when they tend to become clumsy and heavy. Scatter the feed over the ground, such as sheaf oats, soy bean hay, etc., and let the sows gather it. Feed on the side of the field opposite the sleeping bunks. Allow hay in racks, the eating at which is conducive to light exercise. Shut the sows from the houses in the middle of the day rather than allow them to huddle up and snooze peaceably. Schemes to induce exercise cost little, yet the returns are considerable.

W. F. JACOBS Livestock Auctioneer

Thoroughly Posted on Pedigress

Terms Reasonable LISBON, N. D. Write for dates

ST. PAUL UNION STOCKYARDS COMPANY, SOUTH ST. PAUL, MINN. Comparison of Receipts and Shipments of Livestock for May, 1913

	Receipts					
	Railroads	Cattle	Calves	Hogs	Sheep	Horses
C. R. I. & P.....	607	252	1760	3	.....	55
C. G. W.....	1323	891	5599	550	121	157
C. M. & St. P.....	3448	1099	17596	1568	68	428
M. & St. L.....	1849	729	14505	95	.....	302
C., St. P., M. & O..	2410	1195	22761	575	15	450
C. B. & Q.....	423	212	966	76	5	30
M. St. P. & S. S. M.	3015	2457	9584	607	8	277
Gt. Nor.....	4804	3793	25249	781	53	607
Nor. Pac.....	3193	1237	8996	6558	168	283
St. P. B. & T.....	.....	.....	.....	.....	.....	.....
Driven In.....	965	136	1264	198	11	.....
Total.....	22037	12001	108280	11011	449	2589
Increase over 1912	1356	.....	14479	1004	154	380
Decrease over 1912	.....	2248	.....	.....	.....	.....
Jan. 1 to date.....	131478	50788	503783	134145	2091	13283
Increase over 1912	199000	80	7135	12245	648	1503
Decrease.....	.....	.....	.....	.....	.....	.....
Average Wts.....	908	214	239	90	.....	.....

	Shipments					
	Railroads	Cattle	Calves	Hogs	Sheep	Horses
C. R. I. & P.....	922	6	.....	.....	.....	27
C. G. W.....	1715	121	.....	115	35	60
C. M. & St. P.....	3326	546	14584	1990	42	275
M. & St. L.....	730	67	.....	.....	.....	23
C., St. P., M. & O..	3641	2165	135	565	88	149
C. B. & Q.....	737	232	11140	5024	101	156
M. St. P. & S. S. M.	1546	10	.....	222	58	54
Gt. Nor.....	1332	100	.....	.....	25	41
Nor. Pac.....	1058	140	278	88	26	47
St. P. B. & T.....	28	.....	.....	.....	.....	1
Driven Out.....	521	182	63	32	9	.....
Total.....	15556	3569	26200	8036	384	833
Increase over 1912	1134	1363	6245	6091	116	178
Decrease.....	.....	.....	.....	.....	.....	.....
Jan. 1 to date.....	90268	13418	121550	95206	1717	4602
Increase over 1912	22231	6171	2738	21276	.....	956
Decrease.....	.....	.....	.....	.....	1053	.....

Warmth, dryness, ventilation and sunlight are the essentials of an ideal hog house. Such conducive conditions can be secured with a little forethought. Good dry bedding is needed and to be kept dry must be changed regularly. Arrange the houses so as to avoid draughts and heavy winds, preferably placing them in sheltered nooks. Altho the hog can stand considerable cold yet the breeding hog does not have the fat which would ordinarily keep the fat hog warm, neither does the breeding sow have such a warm coat as the horse, for instance, that roughs it. We have found in our experience that sensible shelter saves many cents.

We hog men cannot afford to feed our hard-earned corn and other grains to lice and worms. Crude oil is cheap costs not more than \$4.00 a barrel, is easily applied and does the lice up brown and black, hence why hesitate? It kills the nits at one application and can be used in winter because it is an oil and does not evaporate. An old broom, a sprinkling can and a couple of hurdles handled by two active men is sufficient equipment for ridding the farm of hog lice.

Worms are a serious draw-back. I know of no better remedy than Santonin 6 grains, calomel 4 grains to a hundred pounds of hog given once on an empty (12 hours off feed) stomach and repeated in 10 days if necessary. It is not well to use any worm medicine upon sows within a couple of months of farrow, because all pregnant animals in advanced stages have some tendency to abort when given a strong laxative. The thing to do is to tend to the worms in time.

Laxativeness of the bowels is highly desirable as costiveness is a menace. Plenty of exercise combined with laxative feeds such as tankage, oil meal, bran, alfalfa, hay, etc., will largely solve the problem. However, if it does not, a week before farrowing an emergency remedy of an ounce of Epsom salts per hundred pounds of hog will help considerably.

The essentials of brood sow management may be briefly summarized: Provide suitable food, but do not overfeed. Emphasize the protein and ash constituents. Keep the sow growing nicely but do not fatten. Devise schemes to induce exercise. A dry, warm, well ventilated bed in a sheltered house is in order. Kill

off the lice and drive out the worms because you cannot afford to feed parasites. Avoid constipation by natural feeding management but resort to emergencies if necessary. Practice gentleness with your brood sows, speak kindly in their presence, recalling always that good treatment bespeaks contentment with its corresponding profits.

If poultrymen would worry less about ventilation and pay more attention to cleanliness, there would be less losses. Ventilation is needed, and if the houses are built on the scratching-shed order all will be supplied that is required. But if the filth is allowed to accumulate in a hen-house, all the ventilation that a scratching-shed house can afford will not prevent the entrance of disease.

The late P. H. Jacobs once made a test with chickens of different breeds, using 10 chicks of each breeds, so as to secure an average. When one month old, 10 young Brahmas (together) weighed seven pounds and two ounces, while 10 chicks of the Wyandottes, Leghorns and Plymouth Rocks, weighed seven pounds (every ten), or only two ounces less than the Brahmas. The second month the 10 Brahmas weighed 17 pounds; 10 Wyandottes, 15

pounds; 10 Leghorns, 14 pounds and 10 Plymouth Rocks, 14 pounds. The third month the 10 Brahmas weighed 33 pounds; 10 Wyandottes, 30 pounds; 10 Leghorns, 24 pounds; and 10 Plymouth Rock 25 pounds. Of individual chicks, the third month the heaviest Brahma weighed three and three-fourths pounds; and the heaviest Leghorn, two and one-half pounds

Pedigreed Stock

**PEDIGREED POLAND CHINA
HOGS & SHORT HORN
CATTLE FOR SALE. NOW
BOOKING ORDERS FOR
SPRING PIGS OF THE**

BEST KNOWN BREEDING

WHITE DENT SEED CORN FOR SALE

Booking orders for Barred Plymouth Rock Eggs & Mammoth Bronze Turkeys

Stock for Sale at all times. Pedigree
Furnished. Write your wants to

**C. H. SCHUTT
R. R. 1, Fairmount, N. Dak.**

ST. PAUL UNION STOCKYARDS COMPANY, SOUTH ST. PAUL, MINN.

Comparison of the Origin and Disposition of Livestock for May, 1913

States	Origin of Livestock Received					
	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota.....	17015	9892	84591	3680	64	1997
Wisconsin.....	1487	1590	6907	250	12	168
Iowa.....	49	11	643	.....	55	15
Far South.....	.....	.....	.....	.....	128	6
South Dakota.....	494	118	4156	81	20	83
North Dakota.....	2545	382	11930	623	35	275
Montana.....	180	7	53	6377	130	34
Far West.....	.....	.....	.....	.....	.....	.....
Manitoba & N. W. T.....	.....	.....	.....	.....	.....	.....
Far East.....	267	1	.....	.....	5	11
Returned.....	.....	.....	.....	.....	.....	.....
Totals.....	22037	12001	108280	11011	449	2589
	Disposition of Livestock					
So. St. Paul P'k'rs.	8359	8018	81693	5856	.....	.....
City & State Butch.	384	55	137	88	.....	18
Outside Packers...	187	2057	25722	93	.....	264
Minnesota.....	4875	462	341	508	92	170
Wisconsin.....	2769	49	.....	669	54	95
Iowa.....	2457	254	.....	.....	98	81
Nebraska.....	.....	67	.....	.....	.....	1
Kansas & Missouri.	.....	.....	.....	.....	.....	.....
South Dakota.....	1555	487	.....	.....	.....	50
North Dakota.....	782	80	.....	.....	.....	25
Montana & West..	415	26	.....	.....	20	17
Far South.....	.....	.....	.....	.....	.....	.....
Manitoba & N. W. T.	79	.....	.....	222	10	4
Mich. & E. Can....	228	.....	.....	.....	9	9
Chicago.....	626	.....	.....	6456	.....	50
Ills. (ex. Chicago)..	1162	34	.....	.....	.....	44
Eastern Points....	37	.....	.....	.....	101	.....
Returned.....	.....	.....	.....	.....	.....	.....
Totals.....	15556	3569	26200	8036	384	833

SHROPSHIRE RAMS

I have forty-five thoroughbred Shropshire rams for sale. Coming two and three years old. Prices right. Call and see what I have to offer or write.

FORRESTER H. SMITH

Amenia - - North Dakota



Poultry Department



A FEW NOTES

Duck raisers pack 40 dressed ducklings in a barrel for shipment.

It is generally estimated that broilers shrink a half pound each when dressed.

Carefulness in dressing poultry pays for the extra pains taken. The pinfeathers must all be removed.

The critical period of the turkey is the first eight weeks of its life. About 48 eggs is the average yearly record of the hen.

Dampness in the hen-house is a serious proposition at this time of the year especially, and is one of the surest means of promoting disease.

Produce commission men state that of late years there has sprung up a great demand for late fall-hatched chicks to be marketed in early spring before broilers are "ripe."

The laying hen is not apt to become overfat. Nevertheless, it is a mistake to keep her on a diet of corn expecting her to manufacture eggs from that article. Corn is no egg food.

Potatoes are cheap this year in nearly all parts of the country and small potatoes ought to be procured quite reasonable and make an excellent addition in feeding your green foods.

"Squab broilers" must not weigh over three-quarters of a pound each; generally half a pound is most acceptable. They bring the best prices when marketed during January and February.

The varied diet prevents the clogging of the digestive apparatus and helps keep the appetite keen. Fowls quickly tire of a single diet, and will soon become sick if it is persisted in, no matter what it is.

There is no better germ slayer than an ounce of carbolic acid added to a pail of white wash. Give the walls and ceiling of the hen-house a good coating, working it in rather thick in all cracks and crevices.

It is a mistake to discard a breed on the supposition that it is not a hardy one. Hardiness can be instilled in any breed by proper housing, proper food, proper attention, and systematic breeding.

Professor John Fields says it is probable that soy-beans would be better for growing for poultry food than cowpeas. They give a greater yield of grain, and are of very similar composition and feeding value.

Fresh eggs find ready buyers and command respect. Bad eggs cause trouble. Spoiled eggs go to the tanners. Condemned eggs, tho not spoiled, are sold to the factory for printing calico. Cracked eggs are often sent to the packing house, where they are separated and canned.

Over-exercise toughens the flesh of even a young fowl. A good breast is half the race for a valuable table fowl. A hen bagging down behind is very unattractive as a carcass. The attempt to properly fatten poultry while on a free range, is to throw away time, money and good eating.

While certain breeds are more inclined to yellow skin than others, the fact remains that even naturally yellow-skinned fowls can have the color of flesh changed by feeding accordingly. Corn and cornmeal is the proper food for producing yellow carcasses while fattening.

It seems as tho nothing is so poorly marketed as poultry. If alive they are in a crowded coop, all sizes and colors. If dressed they are so often unattractive. There is no reason why dressed chickens cannot be put on the market in a more inviting condition. Buyers do not hesitate on price for a nice, clean, tasty article.

In buying feed, remember that white middlings is better than the brown, that white oats is to be preferred to the black, that coarse bran is better than fine, that hulled oats is better than oats with the hulls on, that white corn is not so fattening as the yellow variety, and that Kaffir corn is an excellent grain, and should be more extensively fed.

Overfat is a poor market condition. Fowls should be fed fattening food two weeks before marketing. Fat poultry, if dry picked, will cook better. Plump and

neat carcasses advertise themselves. Short-legged fowls generally make the best table poultry. Never pack poultry for shipment until they have been thoroly chilled. Never market ailing chickens. Never ship the latter part of the week, except by special order.

A favorite cholera cure in the west is made as follows: Red pepper, 2 ounces; powdered asafoetida, 2 ounces; carbonate of iron, 4 ounces; powdered rhubarb, 1 ounce; Spanish brown, 6 ounces; sulphur, 2 ounces. The mixture is made into pellets with flour and water and given three times a day. The mixed powder is added to the soft food as a preventive, giving a tablespoonful twice a week to every two dozen fowls.

Much of the mortality among little chicks is due to their being fed too soon. One writer recommends that they be not fed under 72 hours from the time they are hatched. While we know it is a mistake to place food before newly-hatched chicks, at the same time we are not ready to make them wait 72 hours for their first meal. Forty-eight hours is plenty long enough time, and a chick at that age will be in a better condition to partake of food than it would be at 72 hours, when the want of food has begun to weaken the little ones. The food in the chick when hatched will be fully assimilated, digested and allowed to pass from the bowels when 48 hours old.

Referring to the theory that eggs wrinkled at the narrow ends produce cockerels, an English writer says, to the student of embryology this fallacy is at once apparent. For the first few days the chicken is sexual, from then to about the seventh day it is distinctly hermaphrodite, and contains within itself the elements of of both sexes. After this stage is diverged in one direction, one set of organs developing and the other diminishing, according to whether the germ is going to produce a male or female. So that if the germ had a living consciousness it would not know at the sixth day which sex it would ultimately be.

In American Poultry World I find a statement as follows: "Never use wood ashes as a dust bath as they are strongly alkali and will irritate the skin and bleach the shanks. Road dust is preferable for a dust bath, but sifted coal ashes answers the purpose." I should contradict this

1900-C. C. DIBLEY & SON-1913

QUALITY—UTILITY—EXHIBITION

Single Comb Rhode Island Reds, Barred Plymouth Rocks, White Plymouth Rocks, Light Brahmas, Buff Wyandottes.

BIRDS OF HIGHEST QUALITY: Winners in the following shows 1913: Minneapolis and St. Paul, Minn., Fargo & Valley City, N. D. Mating list free. **WOLVERTON, ROUTE 1, MINN.**

statement in such a way, that the person who wrote it has not had enough experience, or if he did, has not paid enough attention to it. We, of course, all know road dust is the best for a dust bath. I do not know either whether the wood ashes bites the skin. This, however, I do know that hens enjoy it and I cannot say that it discolored the shanks. I, furthermore, know in using coal ashes, that it will cause "scaly leg," which in bad cases is very painful to fowls. Commonsense will tell a person that fowls will do without a bath as well as they would with scaly legs.

DRY FEEDING BECOMING POPULAR

Michael K. Boyer,

Of late years dry feeding is becoming quite popular, altho it is not a new idea in the poultry ranks. Fully 20 years ago the matter was agitated and adopted by some poultrymen, but as a general thing it was not favorably received.

The arguments used today in favor of the dry mash and whole grain diet are, first, after becoming used to it, fowls will prefer the ground grain dry to that which is either cooked or steamed; second, it is a labor-saving method, and causes better fertility to the eggs.

At first the fowls will not take very kindly to the dry feed. As meat scrap is mixed with it, they will pick out all such, then probably the cornmeal, or some may prefer the bran, but all of it is seldom consumed until the fowls become accustomed to it. Gradually they will eat more and more of it, finally cleaning the trough. Another benefit is that after eating a few mouthfuls they will repair to the drinking vessel and secure several swallows of water, then back again to the trough, and so on during the entire meal. It is claimed that more water is consumed by dry-feeding fowls, and as water enters so largely in the composition of the egg, increased egg-production should be the result.

The method is a great labor-saver. It is possible to both feed and water the stock in the same time that it takes to prepare the wet mash and feed it.

The writer prefers feeding the dry mash in troughs instead of hoppers, unless a hopper is used that will be proof against mice and rats. Such a hopper should be constructed of galvanized iron, and made to close at night and open in the morning. If large enough to hold sufficient material for several days' feeding, still more labor can be saved.

There is also a decided advantage in the system from a health standpoint. There is not so much danger of overfat hens, and consequently there will be less soft-shelled and deformed or ill-shaped eggs. There will be fewer cases of bowel disorders, and less troubles with indigestion. Wet mash-allowed to remain in troughs any length

of time during hot weather will sour, which is the cause of many cases of sickness.

For growing chicks it is recommended. They eat a few mouthfuls and then take a swallow of water and scamper off for a run. In a few minutes they return and repeat the dose. They never gorge themselves, and when they feel a little hungry a little food helps them out. At night an extra allowance of food is placed in small boxes in their houses so that the youngsters can help themselves at break of day. Nothing gives a chick a worse set-back than pining for food.

But we like only the mash to be fed fowls in that way. The whole grain should be strewn among some light litter, like leaves or cut straw, so that the birds must scratch for all they get. This exercise is needed. The grain should be given at least an hour before time for them to go to their roost, so that ample time is given to hunt. If thus fed in a scratching shed, the fowls will continue their search the next morning at break of day, and the attendant will find them hard at work when he comes around to give them their breakfast.

THE EVOLUTION OF THE POULTRYMAN

Article Three

Robert A. Harrison, David City, Nebr.

Man's Response to Nature's Needs

The average chicken-house today is similar to that of two generations ago. The home of the human family has been modernized, which is more than being made convenient. The varied needs of man's life are met in the adaptability of the 20th-century home. The play, and work rooms, of human nature. Life has a larger expression when all the channels of development are provided for. Likewise the chicken-house should be a response to the entire nature of the fowl.

Ninety percent of the chicken-houses now built bear marks of the tallow candle age. Chicken men have begun to realize it. We are tabulating results today. "Returns on investment" is the efficiency test in chicken raising as it is in other industries. The ordinary chicken-house is high enough to have two and three times the floor space provided. This would divide the cost of housing at least by two; and at the same time furnish normal exercise, and a natural retreat for the shy and exclusive birds.

The hen which is well provided for will spend one-fourth the day in the dust. This for her is bath, exercise, play, and her means of freeing herself from the devitalizing parasites which constantly come unseen. The entire flock can not dust in a small box at the same time—yet they are

BRED TO LAY

And prize-winning strain. Barred Plymouth Rocks, White Orpington Indian Runner Ducks, Silver Spangled Hamburgs; Single Comb White and Brown Leghorns. Stock and Eggs at Reduced prices.

F. C. MITCHELL CROOKSTON, MINN.

THE BLUE RIBBON POULTRY FARM

Twenty Varieties Pure Bred Chickens, Ducks, Geese, Turkeys, Northern raised, fine plumage and 500 prizes to their good. Lowest prices on stock and eggs. Manufacturers of the Blue Ribbon Incubators and Brooders.

Blue Ribbon Poultry Farm
P. O. Box 427 Fargo, N. D.



LICE KILLER Liceoil, strongest lice killing compound made. Works like magic. Simply put a few drops in nests and hang bottle in coop. Powerful evaporating vapors go into feathers, cracks and crevices. No painting, spraying or dusting. Easy to use. Circular free. Pound bottle prepaid 50c. Money back if it fails. Agents wanted W. H. Metzger Co., No. 112 Quincy, Ill.

HATCHING EGGS of the Leading Strains and of the Prize Winning kind. Mammoth Bronze Turkeys, 12 Eggs \$1.50 Barred Plymouth Rock 15 Eggs, \$1.50; 50, \$3.00; 100, \$5.00. **SEED CORN FOR SALE.** Write all orders to C. H. SCHUTT R. R. 1 Fairmount, N. D.

ELEVEN YEARS A BREEDER

Pure-bred poultry: White Wyandottes, Toulouse Geese, Bourbon Red Turkeys and Pearl Guineas. Stock for sale. Write me your wants.
E. A. TOW, R. R. 3 LISBON, N. D.

EGGS FROM BUFF ORPINGTONS AND S. C. RHODE ISLAND REDS at special low prices Bred to lay. F. M. PEZALLA, Cayuga, N. D.

BARRED ROCKS

Bred to Lay and Win
Won all first at Fargo, N. D. State Show, 1906, 1907, 1908, 1909 and 1911. Stock at reasonable prices
PETERSON BROS. Harwood, N. D.

HAUSMANN POULTRY FARM

Breeders of W. Wyandottes and S. C. W. Leghorns
Hillsboro, - North Dakota

WHITE WYANDOTTES. If you want eggs from an early maturing, heavy laying, prize winning strain of White Wyandottes write me. I am developing a special laying strain by use of the trap nest. Prices reasonable. Write
M. C. JAMES, Valley City, N. D.

MAKE YOUR HENS LAY MORE EGGS

I have a method that will make your hens lay every day; it never fails. Write for it. 2c stamp.
MRS. B. F. WILCOXON,
North Platte, Neb., Dept. 8

FOR SALE. M. B. Turkey Toms, raised from our Diploma Stock, \$5.00 and up; also Eggs from 26 varieties poultry. Catalog free.
L. GULDEN, Osakis, Minn.

EGGS FOR HATCHING via Parcel Post or Express from all varieties: Rocks, Brahmas, Wyandottes, Leghorns, Orpingtons, Reds, Cochins, Bantams, Guineas, Geese, Turkeys, Ducks, Pigeons. Also Angus Cattle, Ponies, Duor Jersey Hogs, Dogs, Cats, Rabbits, Pets. Wanted: Young Foxes.

ENVILLA STOCK FARM
Cogswell, North Dakota

REDUCED PRICES ON EGGS

For the months of June, July and August, only, we will sell White Wyandotte, Columbia Wyandotte and S. C. White Leghorn Eggs at \$1.25 per 15; \$3 for 50; \$6 for 100. For Light Brahma Eggs, \$2 for 15; \$3 for 30. Address,

Michael K. Boyer,
Box 17 - Hammonton, New Jersey

all ready for this most natural function at the same hours of the day. The entire ground floor should be devoted to dusting, providing at least two and a half square feet to each hen. The truth of these statements have been proven to me in experiments which I have conducted in my back yard at David City, Nebraska.

The laws of physics teach the simple maxims regarding absorption and radiation of the light and heat rays. Why cut off the rays of the sun by refraction when the direct rays may be transmitted or absorbed by windows and roof especially during the seven dark, cold or damp months of the year. The practical, 20th-century house has its roof and windows set to catch the direct light and heat rays of the sun. Heat comes when heat is needed. Light is had when the days are all too short for the full capacity of the great egg-producing machines.

With the feeding floor above the scratching floor the hens hop easily and frequently back and forth, and have a normal exercise.

It is only the de-natured fowl which does not choose seclusion in all its activities, as well as in placing its egg. The hen is the most easily excited of the domestic animals. Like the wild bird she performs the natural functions of her life always alert for an interruption. Necessity only can cause her to ignore this nature-given law of her being. Hence, all the floors of her house should be private to her, as are the rooms of the owner's home to him.

The day of the automatic "trap nest" has come, hence it takes a floor to meet the necessary demands. When the egg is laid the hen passes thru to the rear of the floor where she can begin feeding again with no loss of time. When the attendant comes the hens which have laid are within reach from the drop doors at the rear of the coop, and the recording, egg gathering, and releasing of the hens are easily done. At the same side of the house the cleaning of the fourth or roosting floor is a small matter.

These are facts, and by a comparison between the four-story house and one of the best two-story houses of an older style—one is forced to wonder at the conclusions—waiting the gradual unfolding in the evolution of the poultry man.

A PROFITABLE POULTRY FARM Machael K. Boyer,

A rightly managed poultry farm, so located that the expense is not too great in marketing, is sure to be profitable. When farms are established near cities, the market practically is right at the door.

Where farms are more remote from these city markets, a profit can be derived by shipping to the large cities. In these days of excellent railroad facilities, any poultry plant within 100 miles of a city can reap

the benefits of good prices, just as much as those located within easy drive. The cost of shipping is easily offset by the reduced cost of conducting such a plant away from highly taxed land.

The poultryman of South Jersey, as a rule, ship their produce to New York city, a distance of 100 miles, and they secure for it the same prices as do the poultry plants located in Northern Jersey, just across the river from New York city. Land is cheaper in Southern Jersey, and the general cost of operating the plant is at least ten per cent less than that of a section more thickly populated and of higher property values.

The foundation of all poultry farms is egg-production. Successful broiler farms are the ones whereon eggs are produced. There is too much risk in buying eggs for hatching broilers. Such broilers as a rule are all sorts and sizes.

But it is a mistake to rely solely on broilers. It is better to have a broiler and egg combination.

There are seven distinct branches of poultry farming; broilers, roasters, eggs, ducklings, goslings, turkeys and squab pigeons. In a farm of about ten acres, where part of it is a grove or an orchard of large fruit trees, and where at a section there is running water so that a pond can be had, it will be found profitable to combine all these seven branches.

A few incubators could be started in December for broilers and kept running until the last of May. Ducklings could be hatched from March 15th to July 15th. While hatching for broilers a number could be selected from the lot and fed and reared for roasting fowls.

During April and May broody hens could be placed on turkey and goose eggs. The squab-pigeons would require no labor as to hatching and rearing the young, as pigeons attend to that duty themselves. In this way during the height of the season there would be broilers, ducklings and squabs for sale, and during the winter eggs, roasters, goslings and turkeys.

Such a farm would accommodate 400 hens—200 of which should be of the American class, as Wyandottes, Plymouth Rocks or Rhode Island Reds; fifty of the Asiatic class, as Light Brahmas; and 150 of the Mediterranean variety, like Leghorns or Minorcas.

One hundred Pekin ducks would keep the incubators busy during the season. Two hundred and fifty pairs of Homer pigeons, mated, would produce all the squabs that the farm could take care of. Six pairs of geese and twelve turkeys and a gobbler, should produce sufficient of their kind to supply the local demand around the holidays.

There seems to be a difference of opinion about the size of a breeding pen for good fertility, as will be seen by the fol-

lowing table giving the number of hens for a male:

Authority	Asiatics	American	Mediterr'n
Jones	12	20	
Buffinton	12	20	
Young		15	25
Stevenson		15	30
Curtiss	8	10	12
Colby		15	
Felch	12	15	
Coburn		15	
Drangle		15	

Each spring there are more or less complaints that the wing feathers of chicks of the Mediterranean class grow so fast that the wings droop and the chick loses vitality. A number of authorities have been consulted with the following result: Bause advises pulling the wing feathers as soon as the chick droops. Arnold says says he finds sweet milk the best preventative for this trouble, giving milk instead of water to drink. White advises clipping the ends of the wing feathers. Kulp believes in cutting rather than pulling the wing feathers. He says pulling them might injure the socket where the feather grows. Howell says he makes it a practise to clip off the ends of the flight feathers on all chicks when they are ten days old.

But, after all, is it the rapid growth of the wing feathers which causes the chick to droop? Is it not more reasonable to believe that the body fails to develop as it should? There certainly must be something wrong in the management that produces such forlorn specimens of chickenhood. Why clip the wings? If they are too heavy for their owners to carry around in their normal position, would it not be more profitable to dispose of the chicken? They hardly would amount to much if they lived to maturity.

Compare such a chick with one that carries the wings folded close to the body. Take it in your hands. Notice the difference in weight, feel how sharp and bony is the breast of one, and how plump the other. Look at the legs—it will take both of the one to equal in size the other strong, thick shank. How weak the bird is; it scarcely moves when you grasp it. And the other; why you can feel every muscle struggling in your hands. It is full of life and strength. Give them their liberty; the droopy one goes a little way and stands exhausted. Those dreadful wings seem to bear him down to the earth. The other chick darts from your hands the moment you relax your hold, and flies from the restraint which was so hateful to his vigorous little body. It certainly does seem that it is cruel to prolong the life of a chick so puny that it cannot carry the weight of its own feathers—if it is not so cruel, is it profitable to raise such specimens?

School and Home

WOMAN'S DAY AT THE TRI-STATE GRAIN AND STOCK-GROWERS' CONVENTION

At the Tri-State Grain and Stock Growers' Convention held at Fargo, January 14-17 one day was devoted to the interests of women and the home.

It takes only slight familiarity with conditions of twenty years ago and at the present time, for one to realize the great transformation that has come about in the betterment of living, due to increased interest of both men and women in this subject. In these agricultural communities there is no better medium to disseminate information than at the Tri-State Fair, and for the woman in the home, interested in her kind and in the betterment of the common life, the woman's program was full of inspiration and helpful suggestions. The high cost of living has shown the important place of woman as an economic factor in the home, and the need that she be educated and informed to meet the tasks which are hers. And so, at this Convention the women of the three states gave consideration to some of the things which have to do with every day life.

A part of the forenoon was spent in inspection tours of the College grounds and laboratories. Professor C. B. Waldron of the Horticultural Department gave a lecture on "Beauty and Value of a Farm Garden." It is pretty well understood that vegetables should constitute part of the diet, and every farm ought to have a good garden, which is large enough to supply vegetables for summer and winter use.

It was encouraging to find that the subject of health was not overlooked and that an hour was given to a lecture on "The Haunts of Disease" by Dr. Van Es.

At the noon hour luncheon was served by the girls of the Home Makers' Course and Short Course in Ceres Hall dining room. This gave an opportunity to these girls to know some of the problems involved in the service of food in quantities. The senior and junior girls of the College assisted as hostesses in entertaining the guests while at Ceres Hall and the Armory.

The afternoon program opened with music, following which Miss Minnie J. Nielson, President of the State Federation of Women's Clubs of North Dakota spoke upon the "Social Life for Women on the Farm." Miss Nielson brought to the people a realization of the importance of a needed improvement of home and community life. Thru various organizations an active interest may be stimulated whereby the woman's viewpoint may be

broadened by contact with women outside her own small circle. She not only receives, but she gives of herself, and in so doing enters upon a service to others, thru which comes the finer and larger development of the individual and the community.

Mrs. C. W. Kelley of Devils Lake gave a talk on "A Successful Farm Sewage Disposal Plant." So many good things are now being suggested and successfully planned for the farm that it is no longer looked upon as a place of isolation and inconveniences. The sewage disposal plant may be so constructed as to satisfactorily care for the disposal of the sewage on a farm.

Next followed a physical culture drill by the College girls under the direction of Miss Alice Haggart, Director of Physical Training of Women at the Agricultural College. The proper development of the body is considered of so great importance that physical culture is given a prominent place in every college curriculum. The excellent work done in this drill indicated the careful training received by those who participated in it.

Miss Catherine Lanxon of Fargo told of how to secure good butter on the farm. Perhaps good butter is best appreciated by those who are often obliged to eat butter of an inferior quality or some manufactured article. Every housewife on the farm should place good butter upon her table. To be eaten with this is required bread of an irreproachable quality. Good bread and good butter, two essentials, are often found missing upon our tables, yet both may be had if proper care is taken in the making of them.

A demonstration lecture followed in which the cookery of vegetables and candy making were considered. This was given by Miss Minna A. Stoner, Head of the Department of Home Economics, Agricultural College, assisted by Miss Grace Linder. Vegetables were prepared to serve as a second course in a dinner and also as a salad. The chemical composition, cost and nutritive value of these foods were considered. The cost and quality of candy made in the home were compared with the cost and quality of the commercial product. Candy-making is a pleasant diversion especially in the country home, and very excellent candy may be manufactured in the home as was well illustrated in Miss Stoner's demonstration, all of which was very helpful and instructive to those in attendance.

This very interesting and instructive session of the Woman's Day at the Tri-State closed late in the afternoon.

HOUSEHOLD FURNISHING Grace Linder, Department of Home Economics, Agricultural College

It is said that perhaps the most significant characteristic in the modern development of education has been extension of the period of culture of the individual. This is made possible by the great number of books and magazines available to the home, by libraries, by clubs, and by schools of various kinds. Even tho organizations and clubs be absent in the community, there still remains one means by which all homes may come in touch with the outside world, namely thru the many publications of the present day. The bulletins issued by the Government and the various colleges and experiment stations of the United States form a large part of these publications, and they offer valuable suggestions and information along many lines. Departments of home economics of some of the universities and colleges have put into bulletin form information which is most helpful to the housewife.

Attention is called to a most excellent bulletin entitled "Household Furnishing" published by the College of Agriculture, Cornell University, Ithaca, New York. The author gives in a very direct and clear way some of the things to be aimed at in the furnishing of a house, and it is thought that a brief mention of a few of the points will be of interest. They are as follows:

"The home should have personality and individuality. The influence of an indifferent interior is not a good one. Not only should the home have qualities of goodness, but it should express com ort, orderliness, harmony, cleanliness, simplicity and honesty. We should try to make every object within our home ring true in purpose, in material and in workmanship.

"William Morris said some forty years ago 'Have nothing in your houses which you do not know to be useful and beau iful.' These are some of the questions one might ask about the articles in each room:

"Does it serve its purpose in a simple and direct manner?

"Is it durable?

"Is it made of appropriate material?

"Is it pleasing in form and color?

AGENTS Earn Easily \$10 to \$20 dollars a day

Selling IMPROVED SELF HEATING IRON. The Iron sells itself. Every house a prospect. How to get one FREE. Send for Agents' Terms and Territory.

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Dept. 6 - Decatur, Michigan

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 cents by express prepaid for \$1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

"If it is decorated, does the decoration improve it, or would it look better if left plain?"

"The use of rugs instead of carpets will lighten the housework. Rugs should be heavy enough to lie flat by their own weight without tacking. A rug that wrinkles up on the edges is an aggravation.

"In choosing rugs, large scrolly patterns should be avoided. The floor should lie modestly in place and not seem to dart to meet one. Large flowers, dogs, cats, and sheep are not good designs for rugs or carpets. Large scrolly designs are not good in wall paper. Such designs are not restful and we wish our homes to be places of rest and comfort. Beautiful rugs can be made from woven rags if care is taken to select good colors.

"Too much stencilling does not give a pleasing appearance to a room. There is always danger of over decoration and crowding of hangings and furniture in a room. The couch or lounge should be provided with only enough pillows to make one comfortable. These pillows may be covered with dinim, linens, cretonnes or some material of plain or good design, but they should not be covered with hand-painted satin, embroidered heads of ladies or of Indians or outlines of pipes, books, steins, horses or scenery. All of these ideas are trivial, for a cushion is a pillow and not a picture. Such decoration is false and inappropriate for the use intended.

"Aside from ventilation, the object of having the windows at all is to allow light to look in and persons to look out. A room appears larger if a view may be had thru a window. Curtains should be pushed aside and not drawn across the window except for reasons of privacy or because of an unsightly outlook. Large figured designs do not give pleasing effects in curtains—better a plain scrim or material with modest line or figure."

The author finally says, "The keynote of all successful furnishing, like the keynote of family life, depends on harmony among its members, the furniture, wall hangings and floor coverings."

A careful reading of this bulletin will bring out many points worthy of consideration by one who has the responsibility of harmonizing the household furnishings—a task which is by no means a simple one.

Bulletins of this nature may be had usually by non-residents of the state in which they are published upon payment of ten cents which is a modest cost for so much that is helpful.

WILL BUILD NEW YELLOWSTONE PARK HOTEL Mammoth Hot Springs to be Rebuilt

Work was started early last month on the construction of a new hotel at Mammoth Hot Springs, Yellowstone Park. Harry W. Child, President of the Yellow-

stone Park Transportation Company, announces that materials are being rushed to Mammoth and the work will be advanced rapidly.

A wing will be added on the north end of the present Mammoth Hotel. The present hotel is to be entirely rebuilt and the construction of this wing is the first step toward that end. It will be of frame, and besides the 150 rooms, will include about 50 bathrooms. It is expected the work of rebuilding the present hotel will be finished in time for the season of 1915.

Beginning with the 1913 season—June 15th—a new and what will certainly prove to be a popular feature in Northern Pacific Park train service, is the placing of open observation cars on the Park trains between Livingston and Gardiner. These cars will be so constructed and arranged that while passengers will be completely protected from the sun, they will enjoy an uninterrupted and continuous view of the scenery. The sides of the cars will be open and seats so arranged as to make sight-seeing most

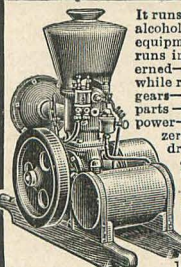
enjoyable. The ride between Livingstone and Gardiner unfolds some of the grandest of the Rocky Mountain scenery. Prominent features are the Gate of the Mountains, Paradise Valley, Emigrant Peak, the Devil's Slide, Electric Peak and Sepulcher Mountain.

SWEEPING

Mrs. W. C. Palmer

The daily brushing up with broom or

20 Reasons Why You Should Investigate the **SANDOW** Kerosene Stationary ENGINE



It runs on kerosene (coal oil), gasoline, alcohol or distillate without change of equipment—starts without cranking—runs in either direction—throttle governed—hopper cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—portable—light weight—great power—starts easily at 40 degrees below zero—complete, ready to run—children operate them—5-year iron-clad guarantee—15-day money-back trial. Sizes 2 to 20 H. P. Send a postal today for free catalog, which shows how Sandow will be useful to you. Our special advertising proposition saves you one-half cost of first engine sold in your county. (167)

Detroit Motor Car Supply Co.
168 Canton Ave., Detroit, Mich.

Cook With Oil

Means Economy, Cleanliness, Ease

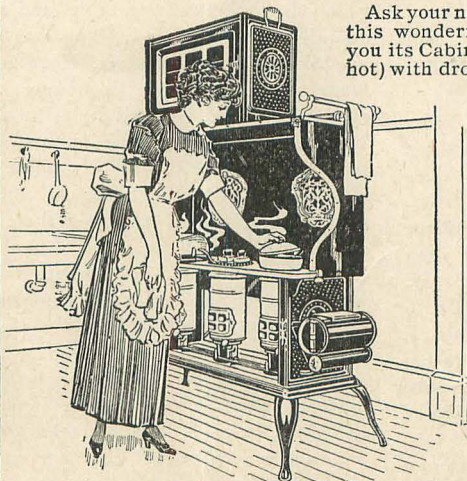
The modern wife of the modern farmer is a convert to the Scientific Management idea. She has displaced gasoline stoves and coal ranges in the kitchen with the NEW PERFECTION Oil Cook-Stove. Nearly a half million are now in use on farms in the middle west. Highly economical, the NEW PERFECTION is no less efficient. It does better baking, broiling, boiling, roasting and toasting than a coal range. But without the dirt, the dust, the excessive heat and the delay of starting fires.

Lights instantly. Burns evenly. Gives forth no odor.

New Perfection

WICK BLUE FLAME

Oil Cook-stove



Ask your nearby dealer to demonstrate this wonderful stove. Have him show you its Cabinet Top, (for keeping dishes hot) with drop shelf and towel racks that

makes the NEW PERFECTION a coal range in appearance and an all-the-year-round Cook-Stove. See the new Oil Reservoir with Indicator. See the Odorless, Smokeless Broiler—a marvel in itself. See our Special Oven. Note the NEW PERFECTION'S wick blue flame. Consider this stove in point of looks, simplicity and general efficiency. Judge for yourself what a saving of money, time and patience a NEW PERFECTION will mean to you.

If you can't locate a dealer, write us direct and get free descriptive booklet.

Valuable Cook Book

Send us 5c in stamps to cover cost of mailing and we will send you free of charge a dandy 72-page Cook Book that's worth its weight in gold. (100)

STANDARD OIL COMPANY, Chicago, Ill.

(AN INDIANA CORPORATION)

carpet sweeper removes the surface dirt but sweeping day means a good digging out. The broom should be of medium weight. Hold it almost perpendicularly and pass over the floor, rug or carpet with a long light stroke and steady pressure which will not scatter the dirt, turning the broom every few strokes so that both sides will wear equally and not become uneven. If there are any closets in the room, sweep those out first, wiping off the floor of each. Dust all small articles and cover. Dust easily moved pieces of furniture and set outside of room. Pieces that are too large to move, cover. Brush upholstered furniture well, going down into tufts with a whisk broom out pointed. Take out curtains and draperies occasionally to air and remove collected dust. If there is a stove or fireplace, remove the ashes and clean before the sweeping is done. Open windows and begin sweeping. In sweeping a plain floor, go with the grain. Steps can be saved by sweeping to a central point, sweeping with the nap of the rug or carpet, never against it. Sweep out the dust and dirt which collects between the edges of the carpet and baseboards. Sweep down cobwebs and run broom lightly over mopboards to remove dust. Use a whisk broom for stubborn corners and cracks. Rugs should be cleaned outdoors but if for any reason they cannot be and are cleaned in the house, turn up edges and remove the dirt and dust that collects beneath the rug. If the floor is of hardwood and polished, dust with a broom covered with a cotton flannel bag. If the floor is painted follow with a damp cloth, rinsing often. Small rugs are easily removed outside, beat and swept off. Never shake a rug as that tends to fray out the ends and corners. Matting should be swept with a soft broom, using care to follow the grain. Wipe off with a damp cloth wrung out of clear water as dry as possible.

FARM BOYS' ENCAMPMENT Valley City Chautauqua—June 30 to July 9, 1913. Under the Direc- tion of the Better Farming Association

Aim

To offer to a selected body of young men the means for a systematic study and observation of the agricultural and livestock problems of the state under the direction of instructors from the Agricultural College of North Dakota and from the Better Farming Association.

Who May Attend

The total enlistment of the Encampment shall not exceed one hundred and ten. Appointments may be made from the following counties in the southeastern section of the state: Foster, Stutsman, Barnes, Griggs, Ransom, Richland, Sargent, LaMoure, Dickey, Cass, Steele and

Eddy Counties. If one or more counties shall fail in their quota, such vacancies shall be filled from other counties, and in the event that any member regularly selected fails to qualify for attendance, a regularly appointed alternate may take his place upon proper qualification.

Conditions of Appointment

Age limit: Fourteen to eighteen years. Fee: A fee of \$5.00 will be required of all boys who attend this Encampment to pay for meals, lodging, admittance to the Chautauqua, tuition, etc. The fee may be sent in at any time, but must be paid before registration closes.

Notice of Appointment

As soon as the delegates to the Encampment are appointed in any county, notice of the appointment and names and addresses of the appointees must be sent to Thomas Cooper, Secretary, Better Farming Association, Fargo, N. D. He will then issue to each appointee his credentials, etc.

Equipment

The Valley City Chautauqua Association will provide cots, blankets, sleeping quarters, board and admission. Each boy should bring towels, soap, and such other necessary toilet articles as he may desire.

Organization

The organization of this Encampment shall at all times be under the control of the Better Farming Association. The Encampment will be under military regulations and in charge of a cadet officer. The instruction will be in charge of instructors from the North Dakota Agricultural College and members of the Better Farming Association, and a physical director from the Young Men's Christian Association of Fargo.

Class and Study Periods

The forenoon of each day and one hour of the afternoon will be devoted to study and class work. The afternoons and evenings may be used for general visitation and observation and for attendance at the Chautauqua.

Rules and Regulations

This Encampment is for serious observation and study and it will be organized and controlled as such. Each appointee must give full and prompt obedience to the regulations. The hours for study, lectures and meals and for going to bed will be fixed by the men in control and enforced by them. No boy shall attend this Encampment who will not submit cheerfully to such rules.

Individual Responsibility

The greatest care will be exercised to keep the boys from hurtful and undesirable experiences. Competent men will be in charge of the camp at all hours and all members of the Encampment will be under close observation. Each boy, however, must be held personally accountable for his action.

Notable Features

In combining the Farm Boys' Encampment with the Valley City Chautauqua an excellent opportunity is offered to the young men of the southeastern section of the state to attend the various educational and amusement features of the Chautauqua. This Chautauqua is among the best in the state and its educational features are exceptionally fine.

Tentative Program

Monday, June 30th. Registration, Preparation of Camp, etc.

Tuesday, July 1st. Horses; Soils.

Wednesday, July 2nd. Beef Cattle; Crop Rotation.

Thursday, July 3d. Hogs; North Dakota Feed Crops.

Friday, July 4th. Farm Crops of North Dakota; Weeds; Observance of Independence Day.

Saturday, July 5th. Corn; Potatoes; Clover and Grasses; Alfalfa.

Sunday, July 6th. Sabbath Observance.

Monday, July 7th. Dairy Cattle; Feeds and the Compounding of Rations

Tuesday, July 8th. Sheep. Silo Construction; Simple Veterinary Lessons; The Farm a Business.

Wednesday, July 9th. Planting the Farm; Presentation of Reports.

Reports

At the close of the Encampment the members will be required to report on the Encampment and the instruction that has been received.

Further information in regard to the Encampment may be obtained by writing Thomas Cooper, Secretary, Better Farming Association, Fargo, N. D.

BAKER'S **Breakfast Cocoa**

Is of Unequaled Quality



Registered
U. S. Pat. Off.

For delicious natural flavor, delicate aroma, absolute purity and food value, the most important requisites of a good cocoa, it is the standard.

Trade-Mark On Every
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53 Highest Awards in
Europe and America

WALTER BAKER & CO. LTD.

Dorchester, Mass. Established 1780

Seasonable Receipts

STRAWBERRIES

Strawberry Shortcake

Sift together one quart flour, two teaspoonfuls baking powder, two tablespoonfuls sugar and one-half teaspoonful salt. Rub one-half cup butter into this and add enough milk to make soft dough. Roll out about one-half inch thick and bake fifteen minutes in a quick oven. Split and spread on berries which have been crushed some and covered with powdered sugar for a half hour.

A nice way to bake shortcake is to roll the dough in two thin sheets; spread butter on one and place the other on it. Baked this way it is easily taken apart and the cutting of hot dough is avoided. It is said that slightly heating the berries before spreading the shortcake improves the flavor. Serve with whipped cream or cream and sugar.

Strawberry Ice Cream

To one quart of strawberries crushed with one and one-half pounds granulated sugar add one pint milk, one pint cream and one teaspoon vanilla. Mix thoroly and freeze. A simple and good receipt.

Preserved Strawberries

For canning or preserving, berries should be perfect and not too ripe. Hull, wash and drain thoroly. Allow three-fourths pound sugar to each one pound fruit. Mix sugar and water in proportion of two pounds sugar to one-half pint water; let dissolve and when it begins to boil add the fruit. Boil fifteen minutes, skim out the berries carefully, putting them in the jars, then boil syrup until it is thick. Drain the thin syrup from the berries and fill jars with the rich syrup. Seal immediately.

For canning, proceed the same but use only one-half pound sugar to one pound berries. Do not boil syrup quite so long and let cans stand on the stove a few minutes when you will find a little more syrup can be added before screwing down the tops.

Keep all canned fruit in a dark cupboard or wrap a paper around the cans. Many save paper bags into which each can is placed.

Baked Fish

Clean, rinse and wipe dry a fish weighing 3 or 4 pounds; rub the fish inside and out with salt and pepper; fill with a dressing like that made for poultry, but drier; sew it up and put in a hot pan with some drippings and a lump of butter, dredge with flour and lay over the fish a few thin slices of salt pork or bits of butter. Bake an hour and a half.

Deviled Eggs

Boil six eggs half an hour. Shell and cut in two. Mash the yolks, into which mix one-half teaspoonful mustard, one-half teaspoonful salt, one-half teaspoonful butter, two teaspoonfuls vinegar and pinch of pepper. Mix thoroly and fill the whites.

Strawberry Pie

Into a rich deep under crust that has been baked put strawberries sufficient to fill and cover with sugar. Make a meringue of the whites of two eggs and two tablespoonfuls of sugar. Cover the pie with it and brown.

To Can Corn, Beans, Peas, etc.

After stripping off the husks and picking off the silks, slice off carefully about two-thirds of the corn with a sharp knife; then with the blade scrape off the kernels left on the cob. Fill the can about one-third,

and with the small end of the potato masher or small stick, gently pack it down; put in more corn and continue until the can is full to the very top. Put on a rubber and screw the lid or top on very tight. Put some cloth, hay or straw in the bottom of the wash boiler (a rack made to fit the bottom of the boiler is best) and on it set the filled cans. Fill the boiler with cold water, being careful to cover the cans with it; set over the fire and boil for four hours. Do not fear the cans will burst even if very tightly screwed down. When you take them out try if it is possible to screw the cover on more securely. After the jars are cool wrap each one in paper and set away in the dark. This is essential. This process succeeds perfectly without failure.

The beans and peas are canned the same way. You fill the cans and overflow them with cold water and put on your rubber and lid the same as for corn. When the cans are cold, I always dip them in melted paraffine to insure perfect keeping.—“The Farmer’s Wife”



Thus Sealed, They Cannot Spoil

Seal Jellies, Preserves, Vegetables and Catsup With **Parowax** and they will keep indefinitely, and retain their natural flavor.

Sealing with Parowax is much simpler and easier, too. No struggling with tops. No fuss, no bother. Not even paper covers need be used.

Pour this pure, refined paraffine directly on the cooled contents of each jelly glass. Dip tops of jars and bottles in melted Parowax. No mould or fermentation can result.

Parowax is indispensable in the laundry—both for washing and starching as well as ironing.

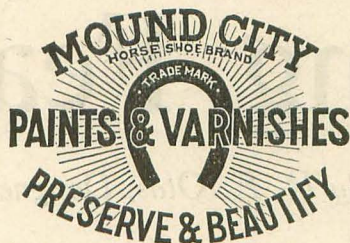
Costs but a trifle. Sold by all druggists and grocers.

Free Book of Recipes
 Mrs. Rorer's prize recipes for preserves and jellies mailed upon request.

STANDARD OIL COMPANY
 (AN INDIANA CORPORATION)
 CHICAGO, ILL.

FRUITS & VEGETABLES SEALED WITH **Parowax** RETAIN THEIR NATURAL FLAVOR

STANDARD OIL COMPANY (135)



Why "Mound City" House Paint HOLDS Its Gloss

WHY do you see so many dull,
faded-looking houses?

The trouble with such houses is that they are Oil-hungry. They are painted with a paint that has not enough Linseed Oil in it—a paint that never *could* have enough Oil in it on account of the character of the pigments used.

The best Paint *must* do two things. It must preserve and beautify. Do you know that Linseed Oil is *the* great preservative in Paint and that if it were not for the sake of appearance, you could give your house a coat of pure Linseed Oil, and it would be protected?

The solid part of Paint (Strictly Pure White Lead, Strictly Pure Zinc, and, in some Paints, baser metals) acts as beautifier only.

Strictly Pure Zinc absorbs more Oil than any other pigment and that is the reason for its use in Horse Shoe Paint. WHITE LEAD is used for its covering qualities, and ZINC for its *Oil-carrying* capacity.

And Oil-carrying capacity is what your Paint *must have* if your property is to be protected.

Horse Shoe Paint, while it covers and beautifies the surface thoroughly, is made of pigments that carry so much oil, that the *first* coat satisfies the oil-hunger of the wood leaving the second coat to gloss, harden, protect, and beautify.

That's why Mound City Horse Shoe Brand House Paint HOLDS its gloss.

Mound City Paint & Color Co.

GOOD MAKERS OF GOOD PAINTS

St. Louis, U. S. A.

NORRIS B. GREGG, President

WM. H. GREGG, Jr., Vice-President

E. H. DYER, Secretary

Coming Features

By R. E. Olds, Designer

**From this time on,
when you buy a car, these
are things to watch for.**

**Left-side drive—
Center control—
Oversize tires—
Set-in dash lights—
Free entrance in front-**

Right-side drive has been abandoned by the leading cars. Hereafter drivers will sit close to the cars they pass.

Skimpy tires are out-of-date. So are projecting side lamps. So is a blocked front door. These features are absent in the best cars now. They'll be absent in all cars soon.

Reo Rod Control

Note that Reo the Fifth has all these new features. And our center control is a one-rod control—an exclusive Reo feature.

All the gear-shifting is done by moving this rod three inches in each of four directions. It's as simple as moving the spark lever.

There are no levers, side or center. Both brakes are operated by foot pedals. So the driver's entrance on either side is clear. He need never dismount in the street.

When you see these features you'll not want a car without them.

Other Advances

Then the Reo marks the latest practice in some other great respects:

Analyzed steel—
Vast overcapacity—
15 roller bearings—
190 drop forgings—
A \$75 magneto—
Doubly-heated carburetor—

Roller bearings cost five times what common bearings cost, but they do not break. Drop forgings cost twice as much as steel castings, but they don't have flaws.

In Reo the Fifth, steel is all made to formula. The gears are tested in a 50-ton crushing machine. The springs are tested for 100,000 vibrations.

Each driving part, for big margin of safety, is tested for 45-horsepower requirements. Each engine is given five long tests—48 hours altogether.

Parts are ground over and over. Important parts are hand-fitted. Nothing is left untested.

What They Cost

These things are costly. Oversize tires cost us \$60 extra. Our unusual features, all combined, add \$200 per car to our cost.

But we save this for you by building only one model. That saves about 20 per cent.

And these things are essential in a car that endures. A car without them may run well for a while, but the second season repairs and troubles come.

Reo the Fifth marks the best I know after 26 years of car building. I would not buy a lesser car myself, so I shall never build one.

In the years to come you'll save hundreds of dollars by having a car built like this.

Sold by 1000 dealers. Show-rooms almost everywhere. Catalog on request.

R. M. Owen & Co., General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**

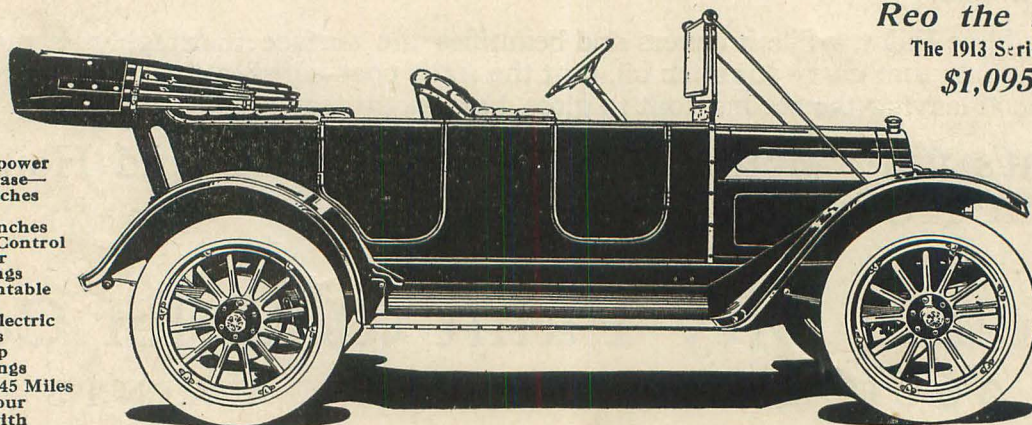
Canadian Factory, St. Catharines, Ontario

Reo the Fifth

The 1913 Series

\$1,095

30-35
Horsepower
Wheel Base—
112 Inches
Tires—
34x4 inches
Center Control
15 Roller
Bearings
Demountable
Rims
Three Electric
Lights
190 Drop
Forgings
Speed—45 Miles
per hour
Made with
5 and 2
Passenger
Bodies



Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, Prest-O-Lite gas tank for headlights, speedometer, self-starter, extra rim and brackets—all for \$100 extra (list price \$170). (Gray & Davis Electric Lighting and Starting System at an extra price, if wanted.)